# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLII. CHICAGO, ILLINOIS, APRIL 9, 1904. No. 15.


## Original Articles.

### SOME TOXICOGENIC GERMS FOUND IN DRINKING WATER.


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[Research in the Hygienic Laboratory of the University of Michigan, 1903.]

At the opening of the hygienic laboratory of the Michigan University in October, 1888, I began a new method for the bacteriologic examination of drinking water, which, with various modifications, has been carried out since that time.

#### THE MICHIGAN METHOD.

The method may be briefly described as follows: The samples are collected in sterilized receptacles and sent to the laboratory without delay. Immediately on receipt, plates are made with 0.05 c.c.,0.1 c.c., 0.5 c.c., and 1 c.c. of the water. For many years only gelatin plates were prepared, and these were grown at room temperature. During the past two years, however, only agar plates are used, two sets being made, one of these grown at room temperature, and the other at 38 C. The reason for this modification will be understood by those engaged in the bacteriologic study of drinking water. The toxicogenic bacteria of water have their optimum growth at 38 C., while many non-toxicogenic bacteria found in water have their optimum at the lower temperature. At the higher temperature the toxicogenic organisms crowd out the non-toxicogenic, while at the lower the reverse is true. The colonies developed on these plates are counted at the expiration of twenty-four, forty-eight and seventy-two hours.

At the same time that the plates are made, beef-tea tubes are inoculated with like amounts of the water, and these tubes are kept in the incubator for twenty-four hours at from 38 to 40 C. This temperature is regarded as a point of importance, and is never allowed to fall below 38 C., for the reason already given that many harmless water germs do not multiply at all, or do so but feebly at 38 C. So far as I know, this fact was first observed in this laboratory, and it has been practically applied ever since the opening of the institution in 1888. If no bacteria develop at this temperature the water is reported as perfectly safe. Certainly it can cause no infectious disease when it contains no bacteria that will grow at the temperature of the human body. It matters not how many thousand it may show per cubic centimeter when grown at room temperature.

When germs are found in any of the tubes after twenty-four hours in the incubator, from 1 to 2 c.c. of the beef-tea cultures is injected intra-abdominally into white rats or guinea-pigs. Generally two animals are thus inoculated from each tube. If none of these animals die from the effects of these injections, the water is regarded as safe. If one or more of the animals die, agar plates are made immediately after death from the heart's blood. The thoracic cavity is opened, the heart exposed *in situ*, its surface seared with a hot iron, and the cavity punctured with a sterile-glass pipette, into which a few drops of the blood is drawn. With the blood thus obtained, the plates are made. The purpose held in view in these animal experiments is to use the animal as a plate for separating the toxicogenic organisms from the non-toxicogenic. These agar plates are developed at 38 C., and the success of the method is largely dependent on the skill and care given to this part of the work. The colonies found on these plates are studied most carefully, and in the routine work five cultures are made from each kind of colony. By this I mean to say that if all the colonies appear to be the same, cultures are made from at least five colonies, while if it is evident that there are two or more kinds of colonies present, five cultures are made from each kind. It is true that this procedure takes considerable time and demands much labor, but it has been found that unless this procedure be carried out, pure cultures are not obtained, and it is subsequently impracticable to differentiate the organisms. It not infrequently happens that when the colonies are apparently the same, we succeed in obtaining two or more germs from them. We have tried for these plates various kinds of culture media, such as litmus-lactose agar, for the purpose of bringing out more differentiation among the colonies. This point is still a subject of investigation, but in the routine work we are employing ordinary agar plates. Sometimes it is found necessary to replate the cultures obtained from the plates originally made from the heart's blood. The cultures obtained from these plates are carried through tests on various media, which will be brought out in detail later. This has been not inappropriately called "The Michigan Method."

#### RESULTS OF THE EXAMINATIONS.

By this method 709 samples of water have been examined since October, 1888. Of these, 213 have contained germs that killed animals, while 496 have failed to kill. These figures include only those samples sent by health officers and other physicians, and do not include all of these, because the records of some of the examinations have been lost. It is the purpose of this paper to give in a condensed form some of the most important results obtained by this method, which has now been employed for sixteen years. Before giving the conclusions, it may be well to make some brief state-

ments concerning some of the waters in which toxicogenic germs have been found. In doing this I will group the waters according to the year in which the examinations were made.

1888: From October to December 31, 15 samples were examined by this method, in none of which were toxicogenic germs found.

1889: In this year 41 samples were examined, 13 of which contained toxicogenic organisms. The first water found to contain a toxicogenic germ came from the water supply of Grand Rapids, Mich., at the time of the prevalence of a mild epidemic of typhoid. Two samples were sent, one from the public supply, which was the unfiltered water of Grand River, which receives the sewage of several small cities above Grand Rapids, and the other from a spring near the city. The first contained 720,000, and the second 2,400 germs per c.c. The first killed rabbits, while the second did not. Therefore, the first was condemned on account of both the number and kind of the germs. Our records contain but little information concerning the organism found in this water. It did not correspond to any of the descriptions given in Eisenberg's tables.

The second toxicogenic organism found came from cistern water in Ann Arbor. Five members of a family of seven (all save the father and mother) had typhoid. There were no other cases in the town at the time, and it was not supposed that the members of this family drank the cistern water, but on inquiry it was learned that the young people used it in their ablutions and for cleaning their teeth. Pitchers of the cistern water were kept in their bedrooms, and one remembered that he had occasionally drank it. The cistern was exceedingly dirty, as was found to be the case on examination, and the water contained 60,000 bacteria per c.c. The toxicogenic organism found in this water is that which has been described[1] under the name of *Bacillus aquatilis venenosus brevis*.

Nos. 3, 4, 5 and 6 of this series came from Lake Teal, the water supply of Negaunee, Mich., at the time of the prevalence of typhoid at that place. Five samples were sent for examination, the fifth being from a sand shaft, this did not contain any toxicogenic bacteria.

No. 7 came from a well near Deerfield, Mich., and was sent on account of the prevalence of typhoid in the family using the water. The toxicogenic germ found in this case was a liquefying organism, undoubtedly a member of the proteus group, and I do not believe that it had any causal relation to the typhoid fever.

Nos. 8 to 13 came from shallow wells at Iron Mountain, Mich., and were sent on account of the existence of typhoid in the families using these waters. This also was a liquefying organism, and had no relation to the disease.

1890: In this year 72 samples of water were examined, 14 of which killed animals. Nos. 1 and 2 came from a cistern that supplied drinking water to a fraternity house in Ann Arbor. Investigation showed that the hopper that received the chamber slops leaked into the cistern. The organism found in this water belongs to the venenosus group, which will be described later.

No. 3 came from a driven well at Rankin, Ill., was a liquefying organism, and had no relation to the typhoid existing in the family.

No. 4 came from a lake at Soudan, Minn., and was sent for the purpose of ascertaining whether or not the water was suitable for drinking purposes. Of the two samples sent, both were from the lake, but at different distances from the shore, and from places of possible contamination. The one nearest the shore contained a toxicogenic germ which seemed to be identical with that obtained from the Negaunee water in 1889.

No. 5 was taken from a well at Soudan, Minn., and was suspected on account of the relative position of the well and privy vault. This organism belonged to the venenosus group. It may be remarked that this water contained only 80 germs per c.c., and was chemically unobjectionable.

No. 6 was from an artesian well at Gladwin, Mich., and was plainly a colon bacillus. The organisms probably came from contamination while collecting the water, as other samples from the same well were not contaminated.

No. 7 was a colon bacillus from a well at Imlay City, Mich. Both of these wells were prospective water supplies, and had not been used.

No. 3 of this series is interesting. It came from the public water supply of Sault Ste. Marie, Mich. This city takes its water supply above the rapids, and ordinarily it is a very pure water. In the fall of 1890, owing to a break in the lock, more than 200 boats were detained for two days above the lock, and in the immediate vicinity of the intake. Some ten days later typhoid appeared, and the deaths were reported to be not less than thirty. All the cases appeared within a few weeks, and this sample was taken with the appearance of the first cases. Samples of the same water collected one month later showed no toxicogenic organisms. The germ found in this water belongs to the venenosus group.

The germ found in No. 9 belonged to the proteus group.

Nos. 10 and 11 came from Wyandotte, Mich., the first from the well of a milkman, whose milk was plainly the cause of the limited outbreak of typhoid. The same germ was found in the water of the well and in the milk, and belonged to the venenosus group. In the public water supply, No. 11, a liquefying organism was found.

Nos. 12 and 13 came from Torch Lake, Mich.; No. 12 from the lake and No. 13 from a well. The men who had typhoid worked at a sawmill on the bank of the lake, and near both lake and well was a large privy that had been used for years and had never been cleaned. A third sample sent at the same time was from another well more than a quarter of a mile distant from the lake, also from the first well. This contained no toxicogenic germs. The men while at work drank from the well near the lake, and when not at work drank from the other well. No one who did not work at the mill developed typhoid. It may not be amiss to state that these facts were not known until after the report was made, the samples having been sent to the laboratory under numbers. The germ found in the well, also that found in the lake water, belonged to the venenosus group.

Nos. 14, 15 and 16 were samples of water from St. Johns, Mich., taken from the public water supply at the time of an outbreak of typhoid. The water was undoubtedly contaminated from nearby privy vaults, and the germs belonged to the venenosus group.

1891: In this year 20 samples were examined, only two of which killed animals. No. 1 of this series came from the public water supply of Duluth, Minn., in January, 1891, at the time of the prevalence of a severe epidemic of typhoid. Five samples were sent under

1. Amer. Jour. Med. Sci., August, 1892.

numbers and without intimation of their respective sources. It turned out that four were from hydrants in different parts of the city, and one from a spring. The one in which the toxicogenic germ was found, as the health officer subsequently informed me, was taken from a tap in a doctor's office, the occupant of which had gone home two weeks before with typhoid, and so far as known, the tap had not been used again until the sample sent me was taken. The germ found in this water has been described as *B. venenosus invisiblis*. It may be remarked that an expert bacteriologist in Massachusetts made several examinations of this water during the epidemic and reported it perfectly safe, and well he might, relying as he did on the number of organisms, which in the four samples examined in this laboratory ran from 80 to 800 per c.c. However, no intelligent man will now deny that the epidemic was due to water pollution, whether the germ found in this laboratory was the cause or not.

No. 2 came from the public water supply of Adrian, Mich., and was sent on account of the existence of typhoid fever. It was *B. venenosus*.

1892: In this year 37 samples were examined, three of which killed animals. The three waters that furnished toxicogenic germs in this year are not worthy of especial notice. Two were from wells, and were sent on account of the existence of typhoid in the family using the water. In both of these *B. venenosus* was found. The third came from a hydrant at East Lake, Mich., and contained a colon bacillus.

1893: The most interesting sample of this year came from the public water supply of Ironwood, Mich. On June 4, Health Officer Nevin sent a sample because a few cases of typhoid had appeared. I found nothing suspicious about the water, the number of bacteria per c.c. being 4,620, and these seemed to be of only one species, which was identified as *B. fluorescens liquefaciens*. Cultures were injected into white rats without effect, and the water was pronounced safe. On June 10 the superintendent of the water works sent a sample. The number of bacteria was increased, being now 7,680 per c.c., but this was not alarming. The *B. fluorescens* still predominated, but in addition there was *B. venenosus*. This water was condemned, but the superintendent of the water works failed to notify the citizens that the water was unsafe, and nearly 700 cases of typhoid fever developed within three weeks. Samples of this water were repeatedly examined during July and August of this year, and *B. venenosus* continued to be present until August 8. The next examination was made August 25, when *B. fluorescens* and *Diplococcus aquatilis* were the only organisms detectable.

1894: In this year 50 samples were examined, 20 of which killed animals. On May 4, 1894, it was found that the Ann Arbor water supply contained *B. venenosus*. The water at that time came from several springs, and the contamination was traced to one of these; that is, this organism was sought in the water of each spring, and found in one only. This spring was detached from the pumps, and the reservoir in use at that time emptied, every hydrant in the city opened, and reservoir and pipes washed out, the bottom and walls of the reservoir whitewashed, and then the reservoir was filled with water from the uncontaminated springs. During the month of May there were five cases of typhoid reported in the city. The next examination of this water of which we have a record was made May 15, when it was found to be free from harmful organisms. In January, 1894, *B. venenosus* was found in the water supply of Grand Forks, N. Dak., where typhoid then prevailed. January 29 two samples, one taken from the mouth of the intake and the other from the pump, were sent for examination. The toxicogenic germ was found only in the water from the intake, and the decision on this water was as follows: "*B. venenosus* I regard as a variety of the typhoid germ. The use of this water should be discontinued." It may be remarked that, so far as the number of bacteria is concerned, both of these samples made a good showing, No. 1 having 1,000 and No 2 800 per c.c. after forty-eight hours. It may be worthy of note that the germs found in the sample from the intake were *B. venenosus*, *B. fluorescens* and *B. figurans*. Possibly it is also worthy of note that on February 5 I examined ice taken from the Red River above Grand Forks. This ice contained no toxicogenic bacteria, but each c.c. of the water obtained by melting the ice contained 1,280,000 bacteria, and the following recommendation was made: "There is no proof that this ice can cause any disease. However, the large number of non-toxicogenic germs renders it undesirable for drinking, and this ice should not be placed in milk or other drinks next summer." The Grand Forks water continued bad for many months, samples having been examined from time to time. On July 14, 1894, I examined two samples each from Red Lake River and Red River above the confluence of these streams. The former contained *B. venenosus* and *B. liquefaciens albus*, and the second contained *Proteus vulgaris*, *B. liquefaciens albus*, and *B. fluorescens liquefaciens*. The two samples of Red Lake River water contained, respectively, 58,000 and 38,000 bacteria, and those from Red River 120,000 and 160,000 per c.c.

1895: In this year 48 samples were examined, 13 of which contained toxicogenic germs. In the summer of this year a number of cases of typhoid developed simultaneously among the guests at the Mexican Gulf Hotel at Pass Christian, Miss. The samples of water came from an artesian well at the hotel, and were sent by Dr. LeRoux. The first sample was examined July 27, 1894. The plates, which were gelatin, and kept in the cooler at 18 to 20, showed no growth at the expiration of twenty-four hours. At forty-eight hours there had developed 2,000; at seventy-two hours, 3,000 per c.c. The germs present were *B. albus* and *B. coli communis*. The latter was not typical, and intraperitoneal, subcutaneous and intravenous injections were made in rats, guinea-pigs and rabbits. The amount used varied from 0.5 to 2 c.c. of a beef tea culture twenty-four hours old. Death occurred in all within from twelve hours to three days. The peritoneum—whatever the method of inoculation—contained a plastic exudate; the mucous membrane of the small intestine was inflamed, and the spleen in the more protracted cases enlarged. The organism was obtained from the heart's blood, spleen, liver and kidney. The record shows that it was "an oval motile bacillus, with length from two to two and one-half times the breadth." Unfortunately the description stops here. The recommendation was as follows:

If the jug in which the water was sent was thoroughly sterilized and the germ found really exists in the water as it is taken from the well, the use of the water should be discontinued. As stated above, this is not a typhoid germ, but it may induce symptoms resembling those of typhoid fever.

On August 16 three samples, one from the Mexican Gulf Hotel well and one each from West End and

East End artesian wells, were received. At the expiration of twenty-four hours no colonies were seen on any of the plates. After forty-eight hours the hotel water showed 200, the West End 500 and the East End 2,000 per c.c. The only organism detected in any of these waters wns *B. albus*. The recommendation was as follows:

**These waters in their present condition can not cause disease. Let it be understood that this statement is based exclusively on the results obtained by the bacteriologic examination of the samples sent. The water from the Mexican Gulf Hotel first sent did contain a toxicogenic germ. Whether this germ was an actual constituent of the water, or due to imperfect sterilization of the jug, I can not tell. If there was a poisonous germ in the water it had evidently disappeared before the small bottles were sent. If this water has been contaminated once, it may become so again, unless the conditions are changed. This should lead to the most careful examination.**

These waters were again examined September 10, and *B. albus* only was found.

In September, 1895, a small outbreak of typhoid fever occurred at Mt. Iron, Minn., and led Dr. Brown to send two samples of the village supply, in both of which a colon-like bacillus was found. In the public water supply of Pontiac, Mich., there was found the only toxicogenic coccus ever found in drinking water in this laboratory, in July, 1895. After death from peritoneal injection, the liver was studded with small pustules. "The organism which caused the death of these animals is a pus germ, and probably came from the container."

In March, 1895, *B. venenosus invisiblis* was found in two samples of well water from Port Huron, Mich., where typhoid fever was present in families using these waters. The water of a third well, used by a family in which typhoid existed, showed no toxicogenic germ. These three wells were in close proximity, and it may be of interest to give the number and kind of bacteria in the waters of each. No. 1 contained 2,000 bacteria per c.c. counted at the expiration of twenty-four hours, and these were *B. albus* and *B. fluorescens liquefaciens*. No. 2 showed 4,000 colonies, and these were *B. albus putridus*, *B. fluorescens liquefaciens* and *B. venenosus invisiblis*. No. 3 developed 500 colonies, and the germs corresponded in kind with those in No. 2.

1896: In this year 51 samples were examined, 15 of which contained toxicogenic germs. In February of this year the Duluth reservoir was emptied and cleaned on account of the appearance of typhoid. Some of the muddy water from the bottom of the reservoir and some of the scrapings from the outside of a Chamberland bougie, through which this water had been filtered for forty-eight hours, were examined. The number of colonies, even when one drop of the water was used, were too great to be counted, and no attempt was made to isolate the different non-toxicogenic bacteria. Cultures from the heart's blood of animals killed with these waters revealed the presence of a bacterium, of which the following is recorded:

**This germ is not identical with the typical Eberth bacillus, but it belongs to the same group. Its chief characteristics are as follows: (1), it is motile; (2), it does not liquefy gelatin; (3), it does not coagulate milk; (4), it does not give the indol test; (5), it forms a yellowish-white growth on potato; (6), in pure cultures it is toxicogenic to animals. It is the belief of the undersigned that water containing this germ is not a safe drinking water.**

In September, 1896, *B. pyocyaneus* was found in the public water supply of Milwaukee, Wis. This was the first time that this organism had been found in samples sent by health officers. It had been frequently obtained from the waters of unused wells. I have never considered the finding of this germ a cause for condemnation of the water. Typical colon bacilli were found in three samples of Milwaukee water, but soon disappeared. They were present in all three samples examined September 17, but had wholly disappeared by September 25. Our records show that cities taking their water supplies from the Great Lakes when the intake is close to the shore, and especially when the intake is from a land-locked bay, frequently drink colon bacilli. This is true of Menominee, Marquette, Traverse City and Petoskey.

1897: In this year 32 samples were examined, only one of which contained a toxicogenic germ. This water was from Marquette, Mich., and the organism was a typical colon bacillus. The water of this city was examined monthly for some years, and on account of the occasional finding of the colon bacillus, the intake was moved out into the lake, and since that time the colon bacillus has been found in the water only once.

1898: In this year 56 samples were examined, 13 of which contained toxicogenic germs. While many of these have more or less interesting features, space will prevent me from referring to more than a few. In March of this year a serious epidemic of typhoid appeared at St. Clair, Mich., and the public water was clearly responsible for the disease. This water was repeatedly examined, and a typical colon bacillus was obtained each time. Every known process for the separation of colon and typhoid bacilli was tried (except that of making a number of cultures from every plate, even when the colonies have the same appearance, and which is now used in this laboratory), but the results were always negative. The germ obtained was a short, slightly motile bacillus, with rounded ends. It coagulated milk within twenty-four hours, gave the indol test, reddened litmus and evolved gas from glucose and lactose cultures. The public water supply was taken from the St. Clair River, and it was supposed to be taken at a distance of some 200 feet from the shore, but investigation showed that the intake pipe had been broken by the ice, and the water was, in fact, taken not more than 20 feet from the shore. Within a quarter of a mile above this point several privies emptied into the river. The intake pipe was repaired and extended a distance of about half a mile, and beyond a long sand bar which ran parallel with the shore, and after this was done the epidemic ceased. It was first asserted by the people of St. Clair that their water supply was contaminated by the sewage of Port Huron, some ten miles up the river; and the water of the St. Clair River, at the mouth of Black River, carrying the sewage of Port Huron, was examined. In this we found "a highly motile bacillus which coagulated milk, reddened litmus, evolved gas and gave the indol reaction. This water is contaminated with fecal matter, and the colon bacillus found in it is highly virulent." However, there is no reason for supposing that the epidemic of St. Clair was due to infection at Port Huron for the following reasons: (1) The main current of the river was beyond the sand bar at St. Clair; (2) the broken pipe at St. Clair and the privy vaults were sufficient to account for the contamination of the St. Clair water, without going to Port Huron to look for the source of the trouble; (3) the epidemic promptly ceased as soon as the local conditions were improved,

TABLE SHOWING CERTAIN CULTURAL PROPERTIES OF SOME BACTERIA FOUND IN WATER.

| Serial Number | Locality where from | Hours required to Kill Guinea pig | Morphology: Long rods | Short rods | Cocco-bacilli | Thick | Single | Pairs | Threads | Motile | Liquefaction of Gelatin | Indol-Ring Test | Cultural Properties: Litmus Milk: Acid | Coagulation | Acid | Coagulation | Acid | Coagulation | Acid | Coagulation | Agar: Appearance: Visible | Spreading | Moist | Thick | Color: Colorless | Gray | Yellow | White | Brown | Pink | Plants darkened | Time in hours | Fermentation: Glucose 2% Total Gas | Hydrogen | Carbon dioxide | Saccharose 2% Total Gas | Hydrogen | Carbon dioxide | Lactose 2% Total Gas | Hydrogen | Carbon dioxide | Time in hours | Group to which organism probably belongs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Typhoid (Vaughan) | 96 | + | + | - | + | + | - | - | + | - | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 48 | 0.0 | - | - | 0.0 | - | - | 0.0 | - | - | 24 | Typhoid |
| 2 | " " | | + | - | + | + | + | - | - | + | - | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | - | - | - | - | - | - | - | - | - | 24 | Typhoid |
| 3 | Colon B | | + | + | - | + | + | - | - | + | - | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.4 | 0.0 | - | - | 1.0 | 1.0 | 0.3 | 24 | Colon |
| 4 | University Hosp. | 18 | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | - | - | - | - | - | - | - | - | 24 | Saccharotic |
| 5A | Traverse City | 18 | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.3 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 5B | Height Perm'th | 14 | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 6 | " " | | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 7 | " " | | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 8 | " " | | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 9 | Height Perm'th | 18 | + | - | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.4 | 0.0 | - | - | 0.0 | - | - | 24 | Bacillus |
| 10 | " " | | + | - | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.4 | 0.0 | - | - | 0.0 | - | - | 24 | Bacillus |
| 11 | " " | | + | - | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.4 | 0.0 | - | - | 0.0 | - | - | 24 | Bacillus |
| 12 | " " | | + | - | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.4 | 0.0 | - | - | 0.0 | - | - | 24 | Bacillus |
| 13 | " " | | + | - | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.4 | 0.0 | - | - | 0.0 | - | - | 24 | Bacillus |
| 14 | " " | | + | - | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.4 | 0.0 | - | - | 0.0 | - | - | 24 | Bacillus |
| 15 | Height Perm'th | 18 | + | - | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.4 | 0.0 | - | - | 0.0 | - | - | 24 | Bacillus |
| 16 | " " | | + | - | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.4 | 0.0 | - | - | 0.0 | - | - | 24 | Bacillus |
| 17 | " " | | + | - | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.4 | 0.0 | - | - | 0.0 | - | - | 24 | Bacillus |
| 18 | " " | | + | - | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.4 | 0.0 | - | - | 0.0 | - | - | 24 | Bacillus |
| 19 | Bay Shore | 96 | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 20 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 21 | Petoskey | 24 | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 22 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 23A | Petts Point | 24 | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 23B | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 24 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 25 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 26 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 27 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 28 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 29 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 30 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 31 | Petts Point | 18 | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 32 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 33 | Petts Point | 24+ | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 34 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 35 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 36 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 37 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 38 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 39 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 40 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 41 | Petts Point | 18 | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 42 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 43 | Petts Point | 24+ | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 44 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 45 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 46 | Avon Gorge | 18 | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 2.5 | 1.0 | 0.7 | 0.0 | - | 0.0 | - | - | 24 | Doubtful |
| 47 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Doubtful |
| 48 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 49 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 50 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 51 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 52 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 53 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 54 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 55 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 56 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 57 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 58 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 59 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 60 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.4 | - | - | 0.0 | - | 0.0 | - | - | 24 | Proteus |
| 61 | University Hosp. | 18 | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | - | - | 0.0 | - | - | 0.0 | - | - | 24 | Saccharotic |
| 62 | Traverse City | 18 | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.3 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 63 | Height Perm'th | 14 | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 64 | " " | | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 65 | " " | | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 66 | " " | | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 67 | " " | | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 68 | " " | | + | - | - | + | + | - | - | + | + | 1 | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 0.2 | 0.1 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 69 | Petoskey | 24 | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 70 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 71 | Petts Point | 24 | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 72 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 73 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 74 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 75 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 76 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 77 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 78 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 79 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 80 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 81 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 82 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 83 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 84 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 85 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 86 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 87 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 88 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 89 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 90 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 91 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 92 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 93 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 94 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 95 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 96 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 97 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 98 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 99 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 100 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 101 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 102 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 103 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 104 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
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| 106 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 107 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
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| 109 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 110 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 111 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 112 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 113 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
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| 115 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 116 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 117 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 118 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
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| 120 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 121 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 122 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 123 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 124 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 125 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + | + | + | + | + | + | + | + | + | + | + | - | - | - | - | - | - | 24 | 0.0 | 1.0 | 0.3 | 0.0 | - | - | 0.0 | - | - | 24 | Proteus |
| 126 | " " | | + | + | - | + | + | - | - | + | + | 0 | - | + | + |

notwithstanding the fact that Port Huron continued to empty its sewage into the river. It might be added that analyses of the Detroit water in March, 1898, failed to show any toxicogenic organism, notwithstanding the sewage of Port Huron and the typhoid at St. Clair.

1899: In this year 35 samples were examined, only two of which contained toxicogenic germs. A nonliquefying motile bacillus which did not coagulate milk, redden litmus or give the indol test, was found in the water of a well at Charlevoix, Mich. Typhoid existed at that time in the family using this water.

1900: The colon germ was repeatedly found in the water supplying the Fletcher Paper Company at Alpena, Mich. There was no typhoid fever among the employes. *B. venenosus* was found in well water sent from Yale, Mich., on account of the existence of typhoid in the family using the well. The same organism was found in the water of Lake Sally, supplying Ishpeming, Mich., at a time when typhoid fever prevailed in that city. Three samples were sent, and the same germ was found in each.

It is an interesting fact that *B. venenosus* was found in the water of Island Lake in 1898, and two years later the same organism was found in this water. This is a small lake, on the shore of which the five Michigan regiments recruited in 1898 had their state encampment, and where the Thirty-fifth Michigan developed an epidemic of typhoid of serious proportions. This lake is quite remote from any village, receives no waste except from a few farm houses, and is not used as a water supply. *B. venenosus* was found in the waters of three wells at a time when typhoid existed in the families using these waters.

1901: In this year 57 samples were examined, 23 of which contained toxicogenic germs. During the fall of 1901 and the winter of 1901-02, the people of Ann Arbor drank daily a water that contained a typical colon bacillus, and the same is true of at least two other small cities in Michigan, and there was no typhoid at any of these places. During the summer of 1901 several examinations were made of both the filtered and unfiltered water supplied at Homestead, Pa. The unfiltered water contained a typical colon bacillus, while the filtered samples contained no toxicogenic germs. However, we have examined many samples of filtered water in which we have found colon bacilli.

1902: In this year 31 samples were examined, 14 of which contained toxicogenic germs. The most interesting case investigated during this year came from Elk Rapids, Mich. This village takes its water supply from Elk Lake, around the shores of which there are numerous possibilities of contamination, and some of these are not distant from the water intake. In February, a limited outbreak of typhoid led to the water being sent for examination. All of the samples contained a toxicogenic germ that was reported as belonging to the colon group, but more extended study makes this classification doubtful. These waters undoubtedly did contain the colon bacillus, but by the extra care in plating already referred to, we obtained from each of these in addition to a typical colon germ, another. This second organism was highly motile, did not coagulate milk, did not redden litmus, did not give the indol test, but did ferment glucose, lactose and saccharose.

1903: During this year 87 samples have been examined, 54 of which contained toxicogenic germs. A few of these are described sufficiently in the accompanying table. The figures accompanying the signs in this table are employed to indicate the relative action of the germ on a scale of 10. For instance, in the column "Indol," the figure 5 indicates that the indol reaction was one-half as marked as it is in cultures, giving the very best indol reaction.

Nos. 1 and 2 in this table are typhoid cultures, and are given here simply for the purpose of comparison. No. 3 is the laboratory culture of the colon bacillus, and is given for the same reason that Nos. 1 and 2 are inserted.

No. 4 is a non-toxicogenic organism, and is inserted here for the purpose of illustrating how easy it might be for one to suppose that he has detected and isolated a typhoid bacillus in water, when the pathogenicity of the organism is not tested. This germ was found in water obtained by melting a piece of ice, and it will be seen that in practically every particular as given in the table, it conforms to the typhoid germ, but even 5 c.c. of the beef tea culture of this organism injected into the abdominal cavity of a guinea-pig weighing from 200 to 300 grams is absolutely without effect. The organism is strictly a saprophyte, and notwithstanding its close cultural similarity with typhoid fever, it is a wholly different organism. I described this germ in 1891 under the name of *B. aquatilis invisiblis*.

No. 5a is a fairly typical proteus organism, as found in drinking water. It liquefies gelatin more rapidly than most samples belonging to this group, and its production of indol is less. Waters containing the proteus germ only are not condemned. However, repeated plating is necessary to be sure that some nonliquefying organism is not mixed with the proteus.

The germs described under Nos. 6 and 7 came from two samples of water sent to the laboratory by Lieutenant Thomason, U. S. A., from the Army post at Whipple Barracks, Ariz. Dr. Thomason wrote as follows:

> The water supply to this post is identical with that of the city of Prescott. It is derived from the valley of the Del Rio, twenty-two miles north. Its source is from a large spring, one of a series of springs, apparently from the same underground source, that bubble up at frequent intervals along the valley for a distance of two and a half miles, and then entirely disappear. These bubbling springs must originate from some subterranean stream. So far as can be ascertained, there is ordinarily no opportunity for contamination. Unfortunately the pipe line leading to this source of supply is undergoing repair, which will require several weeks. In the meantime the city and post are at present being supplied from a well dug in a river bed (the river beds in this country are dry several months in the year), which collects the waste of the greater portion of the town. This supply has, in my opinion, every opportunity for infection. Animal inoculations with germs obtained from this water have in my hands proved toxic, guinea pigs having died within 24 hours. We have not experimented with the Del Rio supply from want of animals. . . . The drinking water used in the garrison has been boiled since I discovered the character of its present supply. Typhoid fever has been endemic in the city of Prescott for years. Many persons having typhoid fever claim that they used no other water than that from the Del Rio supply.

The Del Rio water furnished us with the three germs described under 6, and the well water with the two germs described under 7. Guinea-pigs inoculated with water No. 6 died within fourteen hours. By plating and replating from the heart's blood of these animals, we obtained the organisms described under 6a, 6d and 6e. We have studied these germs very carefully, and it is possible that 6d and 6e are the same organism. They

certainly belong to the same group, and we have classified them as proteus germs. It will be observed, however, that while 6d is motile, 6e is non-motile. 6d produces indol, while 6e does not; 6d coagulates milk more promptly than 6e. However, we do not lay a great deal of stress on this point, nor on the slightest differences seen in the potato cultures, except that 6d was colorless on potato, while 6e was plainly yellowish pink. So far as gas production is concerned, the two germs might be the same. Whatever the relation between 6d and 6e, both of these certainly differ from 6a. The latter does not liquefy, does not produce indol, does not coagulate milk, even after ninety-six hours, and does evolve a much larger amount of gas than either 6d or 6e; 6a, as will be seen from the table, we have classified as doubtful. This water would be condemned.

The differences between 7a and 7b are plainly seen. 7a is a non-liquefying, while 7b is a liquefying organism. 7a produces no indol, while 7b produces this substance in abundance. 7a neither coagulates nor produces acid in milk; 7b does both. 7a is a typical germ of the class, which in this laboratory we have designated under the head of venenosus. Its close resemblance to the typhoid bacillus is easily seen by a study of the table.

8a came from a spring which breaks from a hillside, the top of which is covered with houses, and there are many chances of pollution. This organism certainly belongs to the proteus group, and the water is not condemned.

14a and 14b were obtained from the heart's blood of animals inoculated from the public water supply of Petoskey, Mich. It will be seen that one of these does not liquefy gelatin, while the other does, and one produces no indol, while the other produces this substance. One coagulates milk more promptly than the other. So far as growths on potato and the evolution of gas are concerned, these organisms closely resemble each other. 14a is classed as doubtful, and 14b as proteus. The water is condemned on account of the presence of 14a.

20a, 20b and 20e were obtained from the heart's blood of animals inoculated with water from Battle Creek, Mich. 20e is quite typical of the group venenosus. 20b certainly belongs to the colon group, while 20a we have classed as doubtful. This water is condemned.

21a was from a test well sunk in searching for good water. The water was not condemned.

22a is what we have called *Bacillus venenosus brevis*. Under the microscope this short bacillus may easily be mistaken for a coccus, especially in stained specimens, but when examined in a hanging drop, it will be seen that it is a short motile bacillus. 22e is classed as doubtful.

9a came from a well near Ann Arbor, and was sent for examination because one man in the family using this water developed typhoid fever. It must be stated, however, that this man was several times away from home, and at least once, about two weeks before the development of the disease, spent twenty-four hours in a city where typhoid fever was prevalent.

10a and 10d are interesting. They were obtained from the heart's blood of the same animal. The water came from a well at a farmhouse in which there were two cases of typhoid fever, one of extreme severity and the other light in character. The only marked difference between 10a and 10d is that 10a produced acid in milk, while 10d did not. Neither coagulated milk.

11, 12 and 13 came from different samples of water. All these waters were sent from Petoskey. 11a came from a test well, while 12a and 13a came from the city supply. 11a was not condemned; 12a and 13a were condemned.

### CONCLUSIONS.

1. Of 709 samples of drinking water sent by health officers and other physicians to the hygienic laboratory of the University of Michigan between Oct. 1, 1888, and Dec. 31, 1903, 213, or 30 per cent., contained toxicogenic germs.

2. Ten samples, or 1.4 per cent., contained no bacteria capable of growth at 38 C. Of these 10 samples, 4 were from deep springs, and 6 from the Great Lakes —4 from Lake Superior and 2 from Lake Huron.

3. Waters that contain no germs capable of growth at 38 C. or higher can not cause disease.

4. Waters that contain no toxicogenic germs are not condemned.

5. Waters that contain as their only toxicogenic organism a typical colon bacillus are not condemned. By a typical colon bacillus we mean one which is non-motile, produces indol abundantly, produces acid in milk, coagulates milk within twenty-four hours, and evolves more or less gas from glucose and lactose cultures.

6. Waters which contain as their only toxicogenic organism a typical proteus bacillus are not condemned. It must be remembered that other germs can not be excluded until after repeated plating of the cultures made from the heart's blood fails to show their presence.

7. Waters that contain any member of the venenosus group or any such germ as we have marked doubtful in the table given are condemned.

8. I have never found in drinking water a germ that responded to the Widal test.

9. Sixteen years of experience with this method of water analysis convinces me that the results given by it are in the majority of instances trustworthy.

The development of this method of water analysis and its application have been largely due to the skillful and conscientious work of the many assistants who, since 1888, have worked with me on this subject. I can at present do nothing more than mention their names. During the first three years I had the assistance of the late Dr. F. W. Brewer, who subsequently became a professor in the Agricultural College of Utah. Much credit is also due to Drs. Ives, McClintock, McClymonds and Cooley; and the method owes much to my more recent assistants, Drs. Carhart, Cooper and Williams.

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## A CASE OF ATROPHY OF HAND MUSCLES

### WITH LOCALIZED SENSORY DISTURBANCES; POSSIBLE EARLY SYRINGOMYELIA.*

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CINCINNATI.

The following case is reported because it possesses very interesting features:

*History.*—Miss L., aged 27, consulted me first, Feb. 27, 1903, sent by her family physician because of a localized wasting of the thumb. There is no neuropathic family taint, nor has any myopathic disease ever been present in the family so far as known. Two other sisters were examined carefully with

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Richard Dewey, H. A. Tomlinson and F. W. Langdon.

negative results. The girl is unusually tall and very slender. While tallness is a family characteristic, she is the tallest of all. Tuberculosis has not existed in the family, and patient is also free therefrom.

Pain in the right arm has been noticed since her twelfth year. The arm has also seemed weaker at times than the other, but she has performed all the arduous duties of laundry and house work for many years. There is no history of the supervention of the pain and weakness after any illness, acute or otherwise, which might be regarded as an etiologic factor. Trauma is not in evidence. The pain was never severe in character, but always more noticeable after any special muscular effort, or when heavy clothing was worn. Neither quivering nor twitching has ever been noted. During the last five years and up to the date of the institution of electric treatment by me cramps would appear in the fingers of the right hand. These cramps would cause a stiffening of the fingers, producing extension of the hand on the wrist and flexion of the distal phalanges. Occasionally only two fingers would stiffen in this way, sometimes the little and ring finger, at others the thumb and neighboring two. The cramps would come on several times daily for a few weeks, followed by free intervals of varying duration. There was never any tendency of the cramps to further extension to the arm, and, as said, since the beginning of electric treatment they have been absent.

About three to five weeks prior to February 27, 1903, she noticed for the first time a sinking in of the thumb. She was positive that the wasting must have occurred at about the time stated, certainly not at a period much earlier. It is, however, my impression that the atrophy did not come on so suddenly as she states, though her opinion on this point is quite firmly maintained.

Subjective sensory disturbances were never observed. At no time did she complain of any "numbness" or "tingling" or "coldness," and when questioned by me she did not recall any such symptom.

To sum up she came to me solely because of the atrophied muscle, for had she not discovered this the weakness and pain would have appeared of not much import.

*Examination.*—Patient is 6 feet 2 inches high, very slender, weight 146 pounds. The right arm shows no change, either in the muscles above or below the elbow, but along the outer border of the thumb there is a decided wasting. This is limited to that part of the thenar eminence occupied by the opponens, and the outer part of the abductor pollicis. The interossei and lumbricals are not involved, consequently there is neither deepening of the spatia interossei or the palm.

Movements of Thumb: Abduction and apposition are both performed with less power than on the left. The grip of the right hand is slightly less than the left. Flexion, extension and all other movements of the arm, wrist and hand are properly performed, but on the whole the strength is slightly diminished.

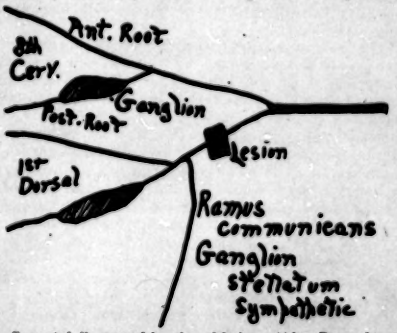
Electric Examination: Reactions are prompt with both currents to equal current strength in all arm and hand muscles, except in the case of the right musculus opponens and abductor.

Pollicis: In these two there is a marked quantitative change to both currents, and the response to both faradic and galvanic is slower than the normal type.

Sensation: No objective disturbance of any kind is present anywhere in the body, except along the ulnar border of the right arm. At the first examination I found a narrow area of sensory change beginning at the internal condyle, and extending in a straight path not over one-half inch wide at any point to the pisiform bone. In the upper third of this narrow area there was thermo-anesthesia; cold was often called warm, very hot was called warm, and occasionally even cold. Tested with the ether spray and cautery the results were similar. In the upper half of this dysesthetic area, or band, there was a considerable degree of analgesia. Throughout the entire area there was a hypesthesia, and in several spots the size of a dime complete anesthesia. With the probability of incipient syringomyelia in view, careful tests for dysesthesia elsewhere were made, and as was the case with the motor disturbance, none was found other than as herein indicated. After two or three weeks electrization, the thermo-anesthesia and analgesia became much less apparent, and indeed I may say that by repeated tests on different days I failed to elicit the marked departure from the normal type, so well seen when first examined. On one or two occasions, however, they would apparently recur, but in a more uncertain and negative manner than at first. On the other hand, the anesthesia, or at least the hypesthesia, was always manifest along the whole narrow band, but never above the elbow. There were no oculopupillar symptoms present. The reflexes were nowhere increased.

The salient features of this case then are: (*a*) Isolated atrophy of two thumb muscles, subacute in its beginning, showing, so far as the limited time of observation will permit any inference, no progressive tendency; (*b*) definitely localized dysesthesia.

The sensory disturbance present differs from the true dissociated sensory type of syringomyelia. In the latter, preservation of tactile sensibility is the rule, in this case hypesthesia prevails. It is true that even in syringomyelia there may be disturbance in the tactile element of sensibility. Roth found it in the proportion of 1 to 18, and considered it to indicate an invasion of the posterior tracts by the gliosis or cavity formation. When it occurs, therefore, we should expect it to be, and it




Suggested diagram of location of lesion. (After Buzzard.)

really is, a late and not an early symptom, being due to the extension of the syringomyelic process. I am unable to find the presence of marked anesthesia as an early symptom of syringomyelia anywhere recorded. I also find but little reference to early syringomyelia, and find no case of it with such slight unilateral muscle atrophy, and such strictly localized sensory change as shown in this case. It appears to me rather difficult to picture a gliosis or cavity formation even in the incipient stage—so situated as to occasion the lesion peculiar to my case. Syringomyelia may, therefore, be excluded.

This case comes under the class of uniradicular palsies, so well described by Buzzard in *Brain*, 1902, where the meager literature of the subject is also cited. Six cases are here detailed, all of which involved one or more of the roots of the brachial plexus; some of the fifth and sixth cervical, others the first dorsal, and in one case the lesion appears to have attacked the fifth cervical and first dorsal, i. e., the upper and lower roots of the plexus. There was thus produced a partial Erb, and a partial Klumpke. The root involved in my case is the first dorsal, and evidently in such a way as to exclude the sympathetic fibers for the pupil.

It is difficult to understand why the atrophy should be confined to the two superficial thumb or thenar muscles,

and why the little finger muscles at least should not also have been involved. The interossei, lumbricals and the long flexors of the hand are not exclusively supplied by the first dorsal, but receive their innervation in part from the eighth cervical. Kocher's table gives the eighth cervical complete control over the long finger flexor muscles, and the first dorsal, according to the views of the same author, controls all the small hand muscles. If we adopt this scheme of Kocher's, with which that of Bruns closely corresponds, but from which that of Edinger and Starr is at variance, we shall be able to understand why a lesion of the first dorsal root need not involve the long flexors of the fingers and hand.

It will be less easy to explain why the other small hand muscles should escape and the atrophy involve only the two superficial thumb muscles. It must be remembered, however, that it was stated that the whole right hand was weaker than the left, and although electric changes or atrophy could not be demonstrated in the hypothenar, interossei and lumbrical muscles, a certain degree of implication may still be present or may yet set in. The site of the lesion must be above the point where the ramus communicans of the sympathetic to the ganglion stellatum is given off, as no oculopupillar symptoms were present.

The absence of any increase of reflexes, so frequent in syringomyelia, may also serve to indicate that the cord itself is intact. The presence of sensory disturbance and the course of the affection warrant one, I think, in excluding atropny of the Aran Duchenne type.

Now with reference to the sensory disturbance, the point is well made by Buzzard that there was no knowledge of any change in sensation on the part of the patients themselves, whereas in peripheral neuritis subjective sensory phenomena are the rule. Buzzard thinks that this absence of subjective sensation of numbness or tingling may prove a differential diagnostic point between root and peripheral neuritis. The character of the dysesthesia, furthermore, is allied to that experimentally produced by a severance of a single posterior root, and as has already been mentioned, different from that form seen in syringomyelia.

I quote from Buzzard the original words of Sherrington:

1. The disturbance of skin sensation produced in macacus by severance of spinal roots is to some extent a dissociative one.

2. In macacus the destruction of a single sensory spinal root, at least in the case of certain spinal nerves, entails in a limited skin area, much smaller than the total skinfield of the root, an abolition of heat sensitivity without abolition, but with some concomitant impairment of actual sensitivity.

3. In the skin of macacus the pain field and the heat field of a single sensory spinal root, at least in the case of certain spinal nerves, are each less extensive than is the "touch field" of the same root.

The changes in my case correspond closely to this description of Sherrington's, i. e., there was a small algesic and temperature field and a larger touch-field. The site of the lesion is in my case near the point of junction of the eighth cervical and first dorsal to form the outer cord of the brachial plexus, but attacking a single nerve only, viz., the first dorsal.

The lesion must be beyond the posterior root ganglion, as evidenced by the absence of herpes. The limitation of the atrophy to the two superficial thenar muscles, and, furthermore, the absence of any sensory changes in the zone of the first dorsal root above the elbow would seem to plead for a very small vascular lesion of some kind. The prodromal period in my case, or rather the preatrophic stage in which the only symptoms were pain and weakness, was rather longer than in any of the cases mentioned in Buzzard's paper, but it is my impression that the atrophy was present for a much longer time than the patient stated.

As to the character of the lesion I have nothing to offer that would not be entirely speculative. The only improvement has been the absence of cramps (which I never saw) and the decrease of the pain. The sensory changes became less marked and more variable, but the atrophy remains unaltered.

## DISCUSSION.

DR. H. T. PATRICK, Chicago—I would suggest that this case was possibly an example of the local atrophy which affects most frequently the hand muscles of persons who are engaged in certain occupations. It is usually accompanied by pain. The cases nearly always recover. They are generally seen in just the kind of people Dr. Wolfstein has described—tall, slender, poorly nourished individuals. In my experience, it occurs most often in seamstresses and in girls who work at bookbinding, as well as in other occupations where there is a particular strain on a certain group of muscles. It is, perhaps, allied to some forms of writer's cramp or palsy. Very little can be found on the subject in the text-books. I do not offer this as a positive diagnosis in Dr. Wolfstein's case, but merely throw out the suggestion, as he did not mention this possibility in speaking of the diagnosis.

DR. WHARTON SINKLER, Philadelphia—The trouble was apparently of peripheral origin. I recently saw a stunted, undeveloped boy of fourteen, who worked hard at manual labor and was a heavy cigarette smoker. He got into a fight, and received a severe blow on the back of the hand. Quite a swelling developed, and subsequently there was a loss of power in the extensor muscles of the hand, with marked atrophy of the thenar and hypothenar eminences. In that case the trouble was undoubtedly of peripheral origin.

DR. ALBERT E. STERNE, Indianapolis—I also was impressed with the idea that the trouble in Dr. Wolfstein's case was in all likelihood due to the occupation of the woman. Dr. Patrick's statement that these patients usually recovered is not in accord with my experience. Still, recovery often occurs. Three years ago I noticed that the ball of the first finger of my right hand, as well as the thenar eminence, began to shrink. This was accompanied by muscular twitchings, which became so violent that I could scarcely hold a knife. I worried a good deal about it, as there was also some pain, and in addition to this I had a localized pain on the left side of the head. If I had seen such a case in my office, I would unquestionably have kept in view the possibility of a gross lesion in the brain. At the Atlantic City meeting I took occasion to speak to Dr. Patrick about it, and he advised me to spend a month at the seashore. I took his advice, and the twitching and pain disappeared. It has since recurred in different regions, but has not been so persistent. In this connection I would recall that in my own paper I referred to this local neurasthenia as being vascular, due to overcirculation and overexcitation, and I am inclined to think that the case reported by Dr. Wolfstein might belong to the same category.

DR. F. W. LANGDON, Cincinnati—I saw this case with Dr. Wolfstein. At first glance, I was inclined to believe that it was one of early syringomyelia, but the later symptoms made me more doubtful, and finally I practically excluded that idea. Dr. Wolfstein's explanation that the symptoms were due to a root lesion I regard as very probable, more so than the explanations offered by those who have taken part in the discussion. An occupation atrophy could hardly be conceived of that would affect merely one or two muscles. The distribution of the atrophy and the sensory symptoms would also exclude traumatism, to which reference was made by Dr. Sinkler. I see no reason why there should be these objective sensory disturbances as the result of overworking a few muscles. I

think the probabilities are in favor of the case being one of radicular palsy, and this view is strengthened by the cases of Buzzard referred to by the author. My experience with cases of muscular twitching has not been always as happy as that of Dr. Sterne in his own case. Some years ago I was consulted by a physician of 40, who had been overworked and somewhat worried. He complained of a loss of dexterity of the right hand, with twitching and numbness. After examining him, I advised him to spend a season at the seashore. This he did, and on his return his health was apparently restored. Shortly after he was found dead in his bathroom, death having been caused presumably by cerebral apoplexy. This shows that we can not always eliminate the presence of cerebral trouble, even if the local symptoms improve.

DR. D. I. WOLFSTEIN—The simple explanation of these symptoms naturally appeals to us, and we thought first of the existence of an occupation neurosis, but on account of the train of symptoms that developed and the peculiar sensory disturbances of the dissociated type, I believe that explanation of the case can be positively excluded. The woman's occupation was that of a general houseworker, and she did not spend much of her time at laundry work.

## ACCIDENTAL PERFORATIONS OF THE UTERUS.*

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DES MOINES, IOWA.

Accidental perforations of the walls of the uterus by instruments in gynecologic practice and in efforts to produce abortion are probably more frequent than the reports of cases would appear to show. The circumstances under which these accidents occur are generally such as would lead them to be passed over and the results which sometimes follow are often no doubt assigned to other causes.

Dr. Brothers of New York has been able to collect sixty-six recorded cases of accidental perforations of the uterus, of which seventeen died and forty-nine recovered.

The use of the sound and the curette in gynecologic practice is probably the most frequent cause of this accident in legitimate practice. The facility with which the sound can be used in exploring the interior of the uterus and in repositing a retrodisplaced organ is no doubt responsible for some of these accidents.

There are no means by which we are able to measure the resistance which the uterine walls may offer to the passage of an instrument, or to determine the ease with which the walls may be penetrated. It is well recognized that when the tissues of the uterus are much softened by inflammation or by degenerative changes in connection with disease that a curette or sound will pass through into the abdomen with so much ease that the fact may not be at once recognized, and it may be sometimes assumed that the denth of the uterine cavity is much greater than the facts will warrant, or it may be thought that the sound has passed into a fallopian tube. It is possible that the instrument has been diverted into the tube, but the probabilities are very much greater that the abdominal cavity has been entered.

When the walls of the uterus are apparently healthy they may be penetrated with greater facility than is generally supposed. This fact will be illustrated by a case related in this paper. While I have never had the accident happen in my own practice, I have always been apprehensive of it, and have been governed by a degree of care which has equaled that exercised in any work I do. There can be no doubt that examinations of the uterus by the sound are altogether more frequent than they should be. I am so certain that information as to the condition of the uterus can be better obtained by other means that I rarely use the instrument.

The curette is no doubt a very useful instrument in a certain class of chronic intra-uterine affections, and often indispensable, but at the same time a very dangerous one. I am quite sure that it is often used in an indiscriminate manner, and as a routine treatment in a great variety of uterine difficulties that could be better treated by other means with a greater prospect of permanent results.

The perforation of the uterine walls by the curette would not be so serious if it were not for the associated treatment which is so often regarded as essential when the curette is indicated. I refer to irrigations. If the uterus is perforated and irrigation is employed a considerable amount of infection material may be washed into the abdominal cavity and the chances of setting up a fatal peritonitis are great. The infection from the curette is serious enough, but when in addition to this the washings from the uterus are carried into the peritoneal cavity, the risk is greatly increased. It should be remembered that when the curette enters to an unexpected depth there is a great probability that the instrument has passed through the walls and the irrigation should be refrained from unless it can be absolutely demonstrated that no perforation has taken place.

Our attention is called from time to time to cases where simple curettage has been performed, followed by a fatal result. It may fairly be presumed that in some of these cases the uterus has been perforated and the peritoneal cavity infected without the knowledge of the operator. Indeed, we have known of cases where not only were the uterine walls perforated, but a considerable quantity of gauze was packed into the abdominal cavity through the opening in the uterus, which was only discovered on postmortem examination.

In April of this year a case came under observation which illustrates the ease with which a perforation of an apparently healthy uterine wall can be accomplished, and what needs to be done in cases of this kind.

CASE 1.—A woman about thirty years of age had acquired considerable skill and dexterity in producing abortion by introducing instruments into the uterus. Suspecting herself to be pregnant or of the possibility of being pregnant, she, about 4 o'clock in the afternoon, straightened out a hairpin, then bent the end over on the main stem to make a close loop so as to avoid the sharp end, which she thought might injure the uterus. She then lay down and introduced the loop end of the hairpin into the uterus, allowing the opposite end to project from the os so that she might remove it at pleasure. After resting in bed two hours she attempted to seize the pin with thumb and finger to remove it, but it slipped from her fingers. She attempted to seize it again, and again it slipped from her and disappeared within the uterus. She at once summoned her doctor, who attempted to secure it with a pair of uterine dressing forceps, but failed. The woman was now in great fear of the results, and her physician finally persuaded her to go to the hospital, where I saw her the next morning. She was so certain that the hairpin was in the uterus or the abdominal cavity that she was willing to submit herself to any operation that was deemed necessary to secure it. The patient was anesthetized, the cervix dilated and the uterine cavity explored with a large blunt curette, but nothing could be felt. The abdomen was opened and the uterus freely exposed. The organ was perfectly normal in size and appearance and free from any evidence of recent or old inflammation or

* Read at the Thirteenth Annual Meeting of the Western Surgical and Gynecological Association, held at Denver, Dec. 28-29, 1903.

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of adhesions. Almost directly at the apex of the fundus there appeared to be a small opening through which I could pass a small probe into the body of the organ. It was now apparent that the hairpin was somewhere in the abdominal cavity. The hand was passed freely in among the intestines, and after a little exploration the lower end of the pin was discovered high up in the left side of the abdomen, the upper end very near the diaphragm. The bent upper end constituted something of a hook which caught in the tissues and would not come down without using force, which might seriously injure the intestine or omentum. A pair of broad ligament forceps was clamped on the lower end of the pin to steady it so that the hand could be withdrawn from the abdomen and a second incision was made at the inner curvature of the ribs, through which I grasped the upper end of the pin, which was pressed against the abdominal wall by the forceps from below. I found the hook on the upper end of the hairpin was entangled in the omentum, and it required some little manipulation to set it free. The pin was removed and the abdominal wounds tightly closed. The patient made an uneventful recovery.

CASE 2.—Several years ago a female doctor, whose practice consisted largely in producing criminal abortion, undertook the treatment of a case of supposed pregnancy. It was said that the woman had passed her menstrual period a few days. The doctor, in her testimony on the trial of the case, stated that she simply introduced into the uterus a soft rubber catheter in the evening, and the next morning on attempting to remove it found it had disappeared. There is reason to believe, however, that before introducing the catheter she had employed an uterine sound to explore the uterus. It was admitted that in searching for the catheter later in the day with a pair of long dressing forceps she caught something which she supposed to be the catheter, and on pulling it down she discovered—after eighteen inches of what proved to be small intestines were outside the uterus—the nature of the object which she had found.

A surgeon was called, but did not feel prepared to do an operation until the next morning. When the abdomen was opened the catheter was found among the intestines and eighteen or twenty inches of small intestine more or less separated from its mesenteric attachment. A resection and Murphy button were used, but the patient died on the operating table. It was claimed that the catheter itself perforated the uterine wall; on this point, however, we have no absolutely reliable information.

There can be no doubt that the uterine walls can be perforated with unexpected ease when in a normal condition, and with much greater ease in certain states of disease. It has been stated that the accident is of comparatively small importance and no serious results will come from it. While this may be true, at least to a certain extent, the admission must be restricted in view of the fact that of the recorded cases about 25 per cent. have proved fatal. Perforations with a sound which has been properly prepared for exploring the uterus will not generally be followed by serious consequences. Perforations with a curette are much more dangerous on account of the larger size of the instrument, and also on account of the possible laceration of the uterine tissue in the curetted area. If there is added to this an intrauterine irrigation the danger is greatly increased.

A few cases have come to my knowledge of perforation of the uterus by the curette followed by irrigation, and the operator, apparently not satisfied with the thoroughness of his procedure, packed a considerable quantity of gauze, which on postmortem was found in the abdominal cavity.

The treatment of accidental perforations of the uterus will depend on the nature of the instrument used. Unfortunately, the circumstances under which many of these accidents occur will often be a bar to proper treatment. In efforts at criminal abortion the ignorance or dishonesty of the operator will effectually interfere with a discovery of the condition of the patient until it is too late for an early operation to be of avail. In the cases which occur in legitimate practice the fear of censure or of malpractice, even if the accident is discovered at the time, will have its influence on the nature of the efforts made.

Dr. Brothers relates that in four cases of perforation with the curette in his own practice, three were successfully treated by rest and local application of ice, while in one the fundus was delivered through an anterior vaginal incision and the opening closed with catgut sutures.

Rosenfeld treated a case in a similar manner. Glaser and Kentman each mention a case of perforation with a curette which was treated by hysterectomy. Schwartz, while curetting after an abortion, perforated the uterus and packed the organ with gauze. The patient, after an attack of circumscribed peritonitis, recovered.

Queisner treated a case by tamponing the uterus, applying ice and giving opium. Guerard, Billroth, Man and Alberti each performed a laparatomy for the repair of perforation. In three of these cases the intestine had passed into the body of the uterus and in two the intestine was resected. All recovered.

If the perforation is small and made with clean instruments and if irrigation is not employed, rest and the application of ice will generally be followed by recovery with probably nothing more serious than a circumscribed peritonitis. If irrigation has been employed one of two courses of action will be necessary. If the infection is mild the treatment by rest and ice may be sufficient. If the infection is of a character to excite a septic peritonitis a vaginal hysterectomy with drainage will be indicated. In the milder form of infection there is danger of chronic inflammatory processes occurring in the pelvic connective tissue or peritoneum, leading to abscess formation and the train of sequences which so often attend chronic infection in this region, and will require the treatment usually demanded in such condition. If the perforation is more extensive or is made with a large size curette, the fundus may be delivered through an anterior vaginal incision and the wound in the uterus closed by sutures, or, as will happen in some cases of perforation resulting from a curettage preliminary to some operation on the uterus through the abdominal wound or by the vaginal route, the choice will be a suturing of the wound or a hysterectomy, as the conditions may indicate. As an immediate operation a hysterectomy is not often demanded unless the organ has undergone some degenerative change. It is certainly not good surgery to allow an opening of any considerable size to go unrepaired, not only on account of the danger of infection of the peritoneum, but on account of the danger of the intestine escaping through the opening in the uterus and becoming strangulated, as actually occurred in several cases.

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**Influence of Acute Infectious Diseases on Leukemia.**—An article by Neutra, issuing from Schlesinger's clinic at Vienna (*Zeitft. f. Heilkunde*, xxiv, No. 11, 1903), discusses the probable cause of the reduction in the numbers of white corpuscles noted in leukemia during and after an intercurrent infectious disease. This reduction is always accompanied by an aggravation of the general condition, and the writer, Neutra, agrees with Fränkel that it is probably due to the disintegration of the white corpuscles by the toxins of the disease, and not to any improvement in the leukemic process. He has found 19 such cases on record.

## THE CHEMISTRY OF THE MEDICAL SCHOOL.

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In the present condition of rapid growth and development in our medical schools, one of the vexing problems which has come up for solution is with reference to the kind and amount of chemistry which should be taught. It is evident to any one who takes the trouble to look that the methods and concepts of somewhat advanced chemistry are becoming more and more the property of the real medical worker, and to-day we hear from the clinician terms which but a few years ago were heard only in the laboratory of the investigator in pure chemistry. Beyond question, the medical man is called on to learn more chemistry and, seemingly, a new kind of chemistry.

Not long ago, in response to the question as to the kind of chemistry which should be taught to medical students, it would have been thought sufficient to answer "medical chemistry," and this somewhat vague term would have been looked on as covering all that is necessary. In giving the proper definition to the term the answer may be satisfactory, but what has usually been understood as medical chemistry is, in my judgment, very far from being the thing which the student needs most. The learning of isolated "tests" for the metals and acids of inorganic chemistry, or the memorization of a long rigmarole of complex organic formulas which may be recited parrot-like, does not constitute a kind of chemical training which is very valuable or very lasting. It brings little help in time of need. The chemistry which prepares for the understanding of the why is far more important than all this mechanical routine. The student must learn some tests, of course; he must, as a matter of necessity, learn how to recognize sugar, albumin, bile or indican, chlorids or phosphates, but this is the merest modicum of knowledge in medical chemistry, and of not much avail for the deeper understanding of things.

The modern physiologic and pathologic chemistry, although apparently concerned almost wholly with organic or organized substances, is really based largely on general and physical chemistry. This can be seen by a study of the journals rather than of the text-books, which still labor under the old limitations. The problems of immunity and toxicity are largely fermentation problems, and these are gradually finding their solution through the study of the inorganic ferments. It seems probable that formulas expressing the reactions of toxins and antitoxins may be written in accord with the mass-action laws; that is, that here as well as elsewhere reactions are found to take place in a way which may be accounted for through some of the generalizations of modern physical chemistry. The old question of the conditions under which uric acid precipitates before excretion is also being attacked from the standpoint of the mass-action law and the dissociation hypothesis, and already certain tangible results have been secured. The blood contains over 20 per cent. of organic substances and less than 1 per cent. of mineral matters or salts, and we are taught to attach much importance to the former and almost wholly overlook the latter. Yet the constancy or variations in the electrolytic components or ions of this 1 per cent. may have far more to do with the physical well-being of the body than the constancy of the 20 per cent. The means of maintaining constancy in these relations through the activity of the kidneys is very largely a problem of physical chemistry, and for a real understanding of the enormous literature which is accumulating on the cryoscopic and conductivity methods in the study of the blood and of the urine, one must go back to the first principles of the new general chemistry. We have acres of clinical experience proving the value of traces of lithium salts in the solution of uric acid concretions, yet a few lines and two or three simple equations in some of our recent special works and journals, have been sufficient to show the absurdity of the whole thing.

New ideas and new modes of expression from the terminology of physical chemistry are coming into the medical literature. We hear much of the toxicity of ions, the osmotic pressure of ions, the applications of the dissociation theory to the theory of disinfectants, etc. The work of Arrhenius and Madsen, referred to in a recent number of THE JOURNAL,[1] is a good illustration. These men have made an effort to apply the mass action and dissociation formulas to the Ehrlich serum antitoxin theory, and while the efforts may not be wholly consistent or successful, they are extremely interesting and suggestive, as they point out a method of controlling or testing the results provided for by the theory. Whether we accept the whole of the present ion theory or not, the terms employed have a meaning and have come to stay. The facts back of the terms are of still greater importance, and to understand them the student needs a thorough groundwork in inorganic and general chemistry. He must have correct notions of stoichiometry, which are best secured through the solution of chemical problems; he must have a practical knowledge of quantitative chemical relations, such as is most readily learned through work in volumetric analysis; he needs some work in elementary qualitative inorganic analysis; but not much, as the applications of such work in medicine are not frequent, and the disciplinary value of the short routine courses which can be given is not great. Finally, along with a general discussion of the more important elements and some of the compounds, he must have illustrated the principles of osmosis, diffusion, osmotic pressure, specific heat and the simple theory of indicators. This paves the way for the elements of organic chemistry, and the whole of the work is preliminary to the study of physiologic chemistry proper.

For the last work, then, which is everywhere admitted as essential in the medical course, the student absolutely needs the training in organic and general chemistry, including some of the most important concepts of that part which is now dignified by the name of physical chemistry. The course in organic chemistry need not be very long, but it must be concise and methodical. The work in Remsen's book is a good illustration as distinguished from that in some of the large manuals for medical students. In one case we have knowledge, in the other the appearance of knowledge. To suggest the value of organic chemistry in lines usually slighted by medical students recall the voluminous literature on the so-called diazo reaction of Ehrlich; a little accurate knowledge of the conditions of this reaction would have saved much useless speculation.

In fine, the medical student needs *modern* chemistry if he is expected to keep up with the advances in other lines and to profit by them. As medical school courses change, and general chemistry becomes a premedical

1. THE JOURNAL, March 5, 1904, p. 651.

study to be taken before the student begins his professional work, care will have to be observed by the authorities of the medical schools to see that the credentials brought cover the right ground. In the future of medicine the higher chemistry will undoubtedly play an important part. These lines are written mainly with the object of calling attention to the relatively great value of general and physical chemistry in this work.

## TROPICAL CUTANEOUS MYIASIS IN MAN.

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WASHINGTON, D. C.

At the present time, when the construction of an isthmian canal has turned the attention of medical men toward the tropical diseases of the Isthmus of Panama, I believe it will be of both scientific and practical value to bring forward a few observations I made on the isthmus, in regard to one of the most troublesome and common diseases of that locality.

Tropical cutaneous myiasis of man is caused by the *Dermatobia noxialis*, sometimes called the *Gusano-peludo* or *Muchs*. Since 1749 numerous authors have treated the subject, but usually from the entomologic standpoint. Among the authors may be mentioned Linnaeus,[1] Say,[2] Clark,[3] LeConte,[3] Verrill, Goudot, Matas, Blanchard,[4] Railliet,[5] and others.[6] Blanchard's[4] article is the most extensive and complete. It contains a synopsis of the writings of thirty-one authors, extending from 1749 to 1889, and gives a detailed description of numerous larvæ which he has examined. Dr. Matas[7] published an article on the larvæ, which he took from the epidermis of two of his patients.

Cutaneous myiasis, as a result of the deposition of the eggs of the botfly, though common in animals of the temperate climate, is rare in man. In the tropics, no other disease is so common to man.

The *Dermatobia noxialis* belongs to the family *Oestridæ*, which includes the botflies. Various species of the family attack the horse, ox, sheep, rabbit, dog, monkey and man. In the horse, the disease is caused by the *Gastrophilus equi*, or botfly, the larvæ of which develop in the stomach and the intestines. In the sheep, it is due to the *Oestrus ovis*, and the larvæ develop in the nose and the adjoining cavities. In the ox, the disease is due to the *Hypoderma lineata* and *bovis*, and is a cutaneous myiasis. In the rabbit, it is due to the *Cuterebra cuniculi*, and results in a cutaneous myiasis. In man, monkey and dog of tropical America, it is caused by the *Dermatobia noxialis* and *cyaniventris*, and produces a cutaneous myiasis. Other forms of botflies, however, do produce a myiasis in man and dog, and at times the ox and sheep botflies attack man.

### GENERAL DESCRIPTION OF THE PARASITE OF THE ŒSTRIDÆ FAMILY.

These parasites pass through three stages—adult, larval and pupa. The adults are heavy-bodied insects, somewhat resembling the fly and the bee. The larvæ are thick, fleshy grubs living a parasitic life in the bodies of various animals; they are composed of twelve segments more or less covered with rows of large black spines. The cephalic and caudal segments are provided with breathing tubes. The larvæ leave the host, then enter the earth, where they remain a certain length of time and finally emerge as flies.

### DESCRIPTION OF THE DERMATOBIA NOXIALIS (FROM BLANCHARD).

Of the adult stage nothing is known other than it is a fly. "The larva is grayish white, pyriform in shape, 14 mm. long, 5 mm. thick, and is composed of seven distinct segments and a long caudal extremity. The anterior part of the first or caudal segment is invaginated and has hooked mandibles, which are scarcely visible. The second, third and fourth segments are covered with fine spines, scattered without order, and most abundant on the anterior half of the second segment. On the posterior border of the fourth segment there is a crescentic row of large black spines or hooks, nineteen in number, and confined to the dorsal surface. The anterior border of the fifth segment is capped by a girdle of large black hooks, twenty-five in number, which correspond dorsally with the half circle above. On the posterior border of this segment there is a dorsal demigirdle of nineteen hooks, similar to that on the fourth segment. The surface of the segment is covered with a small number of spines. The anterior border of the sixth segment has a girdle composed of twenty-three hooks, while the posterior border has a demigirdle of fourteen hooks, which are confined to the dorsal surface like the preceding demigirdle. The spines on the surface of this segment are few in number. On the seventh segment there is but one row of hooks, twenty-two in number, forming a complete girdle on the anterior border of the segment. The small spines and half girdles are missing in this segment. Following the seventh segment, the lines of division between the segments are very indistinct, the portion directly beyond is without spines or hooks, but what would correspond to the tenth, eleventh and last segments are covered with small spines." This description corresponds to the parasites found in my cases.

### MODE OF INFECTION.

The method by which the parasite gains entrance to the body of its host is still clouded in mystery. There are, however, three theories. First: That the fly lays the egg on the skin, where it hatches and the larva bores its way into the skin. This is the theory most generally accepted. Second: The fly lays the egg into a wound previously made by her in the skin, where it hatches, and the larva bores deeper. Third: Recently it has been suggested that the eggs are carried into the mouth, where they hatch; that the larvæ attach themselves to the mucous membrane of the esophagus and pharynx, remaining there for a time to disappear, wander through the tissues of the body and finally locate in the subcutaneous connective tissues. This theory is based on the investigations of Dr. Curtice[8] in the cutaneous myiasis of cattle, a disease due to the *Hypoderma lineata*, a species closely allied and belonging to the same family as the *Dermatobia noxialis*.

### A STUDY OF CASES.

In March, 1900, I was physician in charge of a party of seven whites and twenty-five natives, then exploring

1. Linnaeus: Systema Naturæ.
2. Say: Complete writings, edited by LeConte.
3. Clark: Reas, Cyclopedia, article on "Bots."
4. Blanchard: Sur les *Oestrides americaines* dont la larve vit dans la peau de l'homme. Annales de la Societe Entom. de France, vol. lxi, p. 100, 1892. Note additionelle sur les *Oestrides americaines* dont la larve vit dans la peau de l'homme. Bull. Soc. Entom. de France, Paris, vol. xiv, p. 200. Also Nouvelles observations sur les larve de *Dermatobia noxialis*. Bull. Soc. Centr. de Med. Vet., Par., v. 50, s. s., vol. xiv, pp. 527-538, 1896.
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6. Insects affecting domestic animals, U. S. Dept. of Agriculture, Bureau of Entomology, Bulletin No. 5.
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8. Curtice (Cooper) Journal of Comparative Medicine and Veterinary Archives, vol. xii, No. 6, 1891.

for a canal site at Caledonia Harbor, Isthmus of Darien. Of the seven whites, six became hosts of the parasites, and had a total of nineteen lesions. One white man who never took off his clothing escaped. Another, equally opposed to removing his clothing, had one parasite located in his ankle, which he constantly exposed to the attacks of the fly by going around in slippers and pajamas. Of the five remaining whites, all had at least two parasites, the writer having five. Among the natives, no record was kept as to the number of lesions, but it was noticed that, although they were in no sense immune from attacks of the parasites, they were seldom the hosts of more than one or two of the larvæ at the same time. The white members of the party were first exposed to the attacks of the parasites March 14, 1900. April 7, 1900, several complained of small boils, which later proved to be parasitic. The locations of the parasitic tumors in the whites were as follows: ankle 4, elbow 2, abdomen 3, thigh 2, calf 2, upper arm 2, buttocks 1, back 3.

The deposition of the eggs on the skin usually occurs while the individual is in bathing, as has been attested by numerous observers and victims. That the individual attacked is ever aware of the exact moment of the deposition of the eggs, must be viewed with doubt. Few of those stung in a tropical country pay any attention to such a trifling and common occurrence as a sting, much less remember the exact location with reference to the development of a boil sixteen days later. The

Fig. 1.—Diagrammatic drawing of parasitic tumor giving natural size of tumor and parasite after two and a half weeks' growth, and showing oblique position of parasite, capsule, central opening and relations.

period of incubation is from sixteen to twenty-three days.

The first indication of the disease is denoted by the appearance of small red papules, about the size of a pin head, each of which has a clear, well-defined, minute central opening. For about a week no symptom other than an increase in size of the papule with a corresponding increase in size of the central opening, is manifest. The patient usually imagines it to be, and the growth strongly resembles, a boil. On the seventh or eighth day after the discovery of the papule, a sharp pain, lasting a few minutes, occurs during the night, and is not unlike that which would be produced by a gimlet boring into the flesh. This is repeated at intervals of an hour or more. During the day no inconvenience results, but during each night the larva becomes more and more active as it increases in size and the tumor continues to grow. No one who has not been the host of one of these developing parasites can imagine the excruciating agony which it nightly produces. The tumor is now about the size of a twenty-five-cent piece, and the central opening one-sixteenth of an inch in diameter. At the end of a week of larval activity or two weeks from the first indication of papule, the patient becomes desperate and procedures for expulsion are at once instituted. In no cases under my observation has the larva remained in the subcutaneous connective tissue of man more than two and one-half weeks. The activity of the larva, the rapid growth of tumor, and progressive enlargement of the central opening, would lead to the supposition that if left alone it would make its own exit in a few days to enter the pupa stage. When expelled after two weeks' growth, the larva is from one-half to five-eighths of an inch in length. They differ in form according to the situations in which they develop. Those developing in portions of the body well covered with muscular tissue show a grad-

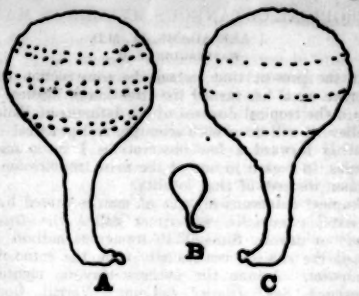


Fig. 2.—*Dermatobia noxialis;* larva. Shape of parasite when developed over bony prominences. A. Dorsal aspect showing double rows of spines. B. Larva, natural size. C. Ventral aspect showing single rows of spines.

ual tapering from the cephalic to the anal extremity, while those developing over bony prominences, like the ankle, have a marked cephalic bulb and a long caudal extremity.

### TREATMENT.

As the parasite or larva is firmly attached to the tissue in which it is located, it is best and, indeed, necessary to institute some preliminary procedures,

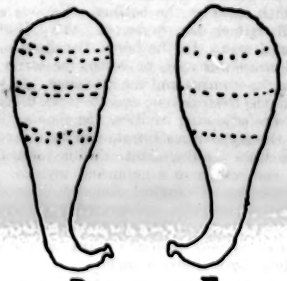


Fig. 3.—*Dermatobia noxialis;* larva. Shape of parasite when developed where muscular tissue is abundant. D. Dorsal aspect. E. Ventral aspect.

causing the parasite to lessen its hold before attempting manual expulsion. As an abundant air supply is necessary to the life of the developing parasite, this is shut off by closing the central opening in the parasitic tumor with adhesive plaster, cotton and collodion, postage stamp, tobacco leaf or other measures. After twenty-four hours the larva is thoroughly asphyxiated, the plaster is taken off, and only slight pressure is necessary to cause its expulsion. Ulceration, abscess and fatal results mentioned by some writers and attributed to this parasite are due to the improper treatment, and

are the result of forcible attempts at expulsion, without asphyxiation of the parasite. In these cases the larva is crushed and only partially expelled, the surrounding tissue is bruised and the capsule inclosing the parasite is broken down. The portion of the parasite remaining undergoes decomposition, germs enter and an abscess is the result.

SUMMARY.

1. Cutaneous myiasis in Darien is usually due to the *Dermatobia noxialis*.

2. Man and dog are host by preference. The *Dermatobia noxialis*, though not confining its attacks to man alone, can not be called an occasional parasite of man, as it attacks all who are properly exposed.

3. White-skinned races are more susceptible to the disease than the darker races.

4. The period of incubation is from sixteen to twenty-three days, from exposure to the development of the first symptoms.

5. Larvæ differ in shape according to anatomic location.

6. Grub or larva, if left alone, will not produce injurious results. Abscess and ulceration are the results of attempted expulsion without proper preliminary treatment.

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## CARCINOMA OF THE LUNG; PANCREATIC CYST.*

W. W. GRANT, M.D.
DENVER.

I report two cases of carcinoma of lung because of special interest attached to each—one recurring after an unusually long interval, and having at one time coincident tubercle bacilli, and while occurring several years ago is worthy of record; the other recently, and seemingly primary.

J. M. D., aged 48, Davenport, Iowa, school teacher. Personal and family history good. In February, 1894, had a dry cough. By fall the cough had increased and weight diminished. At this time Bierring, the pathologist at the Iowa University, found tubercle bacilli in the sputa. He went to Santa Fé, New Mexico; returned in the spring of 1895, having gained fifteen pounds, with the disappearance of bacilli. In June, 1895, he was examined by me in consultation with his brother, Dr. De Armand of Davenport. He had resumed his work, was pale, suffering much from dyspnea on slightest exertion, cough dry and expectoration slight. Slight circumscribed dullness was manifested about bifurcation of right bronchus, with some roughness in respiration. With this condition and history I thought, with all others who had examined him, that he was suffering from tuberculosis. In the fall of 1895 he went to Phoenix, Ariz., and lost weight and strength rapidly. Glandular enlargement of neck, axillæ and head, I was now informed by letter, was conspicuous, which caused me to suggest to his brother that the disease was malignant. He then informed me that six years before the left nipple was excised on account of a persistent ulcer, which was caused, it was believed, by a suspender buckle. This cleared up the history of the case, for it was undoubtedly a carcinomatous ulceration, though the interval of secondary infection was unusual.

He died June 2, 1896, after several months of extreme suffering from asphyxia. Postmortem by Dr. W. L. Allen of Davenport: effusion in both pleural cavities. Left lung in condition of atelectasis; right lung partially so. No evidence of tuberculosis. First bifurcation of left bronchus was surrounded by a fibrous mass, constricting the tube and completely excluding air. Same condition at same point of right lung, but permitting a little air to enter the lung. Pathological examination by Bierring showed the disease to be undoubtedly carcinoma. The coincidence of tuberculosis with carcinoma of lung or bronchial tubes has been repeatedly observed, but its existence and disappearance, as in the foregoing case, and the interval of at least four years from the excision of the nipple (no glands being removed) to the appearance of glandular infection and cough, make a history of unusual interest.

Shaw[1] reports a case of primary carcinoma of lung, and notes the similarity of tuberculosis in certain phases of the history. More recent cases are reported.

Mirklen and Girard[2] report a case constricting right bronchus, close to bifurcation. In thirty-one autopsies of carcinoma of lungs by Wolf, thirteen were complicated by tuberculosis. A great majority of cases of lung cancer are in men.

The second case is A. V. Rider, Davenport, Iowa, aged 57, railway engineer. He was in a collision in January, 1902, and suffered, he says, a fractured rib (left side), and from this he dates the beginning of his illness. May 14 he was seen by Dr. De Armand, who observed congestion of larynx and hoarseness, but did not regard his condition as serious. He continued to grow worse and Dr. De Armand examined him more thoroughly, and believed the case malignant. On June 4 he was seen by Dr. Allen. Paralysis of vocal cords and suffering from severe asthmatic symptoms, temperature normal and pulse 80. On June 22 I was passing through Davenport and was asked by Drs. De Armand and Allen to examine the man. He was suffering extremely from dyspnea, with loud crepitant and sonorous rales, and mucopurulent expectoration abundant. No bacilli; had lost thirty or forty pounds in the last three months. Dr. De Armand called my attention to a hard growth deep in the neck on left side of trachea, with fixed point in chest. No glandular enlargement and no pain. I had no doubt he was suffering from carcinoma of lungs or bronchi.

He died asphyxiated on June 25. Postmortem by Dr. Allen, who writes me that he removed a large, hard, irregularly shaped mass involving the bifurcation of bronchi, partially enveloping esophagus and aorta, with apparently some connection with connective tissue of anterior mediastinum. The lungs in the vicinity were involved and small nodules scattered through both lungs. There was also a prolongation of the growth into the neck on the left side. This was the mass felt on deep palpation of the neck on June 22.

Postmortem showed no disease whatever of stomach, but in the duodenum was a circular scar involving mucous and muscular coat with some narrowing of the intestine, indicating a perfectly healed ulcer.

There were no adhesions between costal and lung pleura, or other evidence that the railway accident had injured the lung at all.

The history and condition did not indicate a fractured rib. A section of the pathology was sent me, and examined by Dr. W. C. Mitchell with the following result:

"All of the specimens of tissue sent me proved to be carcinomatous, the areas surrounded chiefly by fibrous

* Read at the Thirteenth Annual Meeting of the Western Surgical and Gynecological Association, held at Denver, Dec. 28-29, 1903.

1. British Med. Jour., June, 1901.
2. Presse Médicale, June, 1902.

tissue; one specimen was evidently a lymphatic gland with numerous foci of carcinomatous cells."

I received no specimen of the intestinal lesion, but Dr. Allen writes that section of it did not reveal carcinoma cells. While cases of primary carcinoma of the lungs are now and then reported, they are rare, and I do not present this as a convincing one, yet unless there was some error concerning the duodenal lesion, it seems probable that it originated in the bronchial or lung tissue. The patient told me that he had never suffered pain, but about a year before the fatal illness some indigestion of short duration, which was, probably, caused by the lesion of the duodenum disclosed by postmortem.

I have nothing to offer for the relief of this very distressing condition, whether primary or secondary, unless it should come from the application of the Roentgen rays.

For the clinical history of the following case of pancreatic cyst, prior to being referred to me, I am indebted to the attending physician, Dr. T. B. Gormly of Windsor, Colo.

Mrs. C. C. L., aged 37, wife of a farmer, youngest child 10 years old. Personal and family history good. Never before had any serious illness. Was taken suddenly March 3, 1903, with severe epigastric pain, for which a hypodermic of morphia was given. Temperature normal, pulse 120. Patient very fat, weighing over 200 pounds. Next seen April 4, when pulse was 90 to 108, temperature 100.5, and pain and tenderness in the epigastrium, and extending to the left, persisting. Seen again April 19, suffering much from gas in stomach and indigestion, with occasional vomiting; pulse 120, temperature normal, but losing strength and flesh rapidly. Palpation showed tumor in the left upper quadrant. Stomach rejected food and rectal alimentation commenced and continued from this date, during which time tumor increased in size; temperature varied from 100 to 100.5, being on one occasion 101, and pulse 115 to 125. On May 8 advised exploratory section. On May 18 patient reached Denver and was placed in my charge. At this time her temperature was 97.5, pulse 104. A large, smooth, oval, immobile tumor was easily outlined, occupying epigastrium and left hypogastrium, extending downwards one inch below horizontal line from the umbilicus, and one and a half inches to right of middle line from ensiform cartilage to umbilicus. The abdominal wall was so thick from fat that fluctuation could not be detected. Monro says: "Almost all patients are markedly fat."[3]

No diarrhea, no previous examination of urine, but no sugar nor albumin now in urine. Blood examination by Dr. W. C. Mitchell showed it to be practically normal.

She has had no fall nor injury. No jaundice, though a slight staining of the conjunctiva exists. No history of gallstones. From a careful consideration of the clinical history, and the differential diagnosis as to adrenal, kidney, gall bladder and omental cysts, and especially hydatid of the left lobe of liver, I concluded it was a pancreatic cyst. This opinion was shared by Dr. J. N. Hall of Denver. At the same time it must, at present, be admitted that no absolutely positive diagnosis can be made without operation. Aspiration for diagnostic purposes is often more dangerous than incision, so I determined to operate, and May 23, at St. Luke's Hospital, made an incision three inches long in the middle line from umbilicus upward. The wall was nearly three inches thick in fat. The sac was adherent to the abdominal peritoneum, which was quickly opened, and at least a gallon of chocolate-colored liquid was evacuated. Further examination with fingers and long dressing forceps showed that the cavity included the lesser peritoneum, extending to the left lumbar costal angle. The sac was thoroughly washed out with warm salt solution, and a six-inch rubber drain half an inch in diameter with shoulder at inner end, inserted. There was a free serosanguinolent discharge, with some pus, for a day or two. The discharge diminished rapidly and changed, being more purulent with thick dark-colored material, which I regarded as due to sloughing, and which ceased at end of first week. The parts were now contracting and closing on the tube tightly so it was partially withdrawn, and three inches cut off. The day after operation the temperature was 100.5 and pulse 108. From the third day until date of discharge, on June 16, twenty-four days after operation, the temperature ranged from 97.5 to 98.5 and pulse from 80 to 100. Before discharge a small short drainage tube was inserted, and the wound closed permanently in ten days. She suffered greatly from dyspnea before operation. The digestive and gaseous disturbance continued severely for two months. Her digestion is now very good and strength and weight have improved in marked degree, and except for tingling and some numbness in hands and feet, which is disappearing, she writes me that she considers herself quite well. The contents of the sac were examined and a large number of fat, blood and pus cells were noted. Trypsin was absent, as usual in large cysts. Feces were not examined. The suggestion to open the cyst in the costo-vertebral angle, because shorter and more direct, and more dependent, therefore favoring more perfect drainage, is a good one, and in a future case I should do it, but should make the anterior "incision" first, both to confirm the condition and to facilitate the posterior operation, closing the anterior incision at once, or within a few days.

The cause of pancreatic cyst is doubtless due usually to obstruction of the pancreatic duct by stone, as suggested by Senn, and endorsed by some other observers; the obstruction being due to calculus or interstitial pancreatitis. Most writers agree that hemorrhage is not a primary cause of cyst, though admitting that it is at least a secondary phenomenon, and itself may be due to obstruction of one or both pancreatic ducts. Stone in the common bile duct, by closing the duodenal orifice of the pancreatic ducts, is an admitted cause. Lloyd says that effusion into the lesser peritoneum has been mistaken for pancreatic cyst, but the mistake is improbable when one remembers that this effusion, independent of pancreatic disease, is rare, and is due usually to injury, and the injury which produces this will generally damage the pancreas. It is entirely improbable from its location that the pancreas can be seriously injured without affecting other parts, and effusion into the lesser peritoneum as a consequence of pancreatic disease is common. The tail of the organ is believed to be the most common seat of cyst, and the head more frequently affected in carcinoma. Cases of cyst have been reported which presented no evidence of obstruction by calculus. No satisfactory evidence of stone exists in the case I report. The belief that inflammatory conditions will result in hemorrhage and cyst is justifiable.

Opie has demonstrated that the injection of healthy bile into the pancreatic duct of animals will produce hemorrhage and fat necrosis. Infected gall bladder and ducts will, through the pancreatic duct, infect the pan-

3. Jour. A. M. A., 1902, vol. xxxix, p. 809.

creas. Hemorrhage is common in icteric cases, and the statement that pancreatic hemorrhage is more common when the jaundice is due to pancreatic obstruction than when it is due to gallstone obstruction, is a rational one. Blood condition is the probable explanation. Though diabetes is common without disease of the pancreas, Opie has demonstrated that total destruction of the pancreas is followed by diabetes, but partial destruction is not. Investigation tends to prove that the latter is due to the fact that the islands of Langerhans, certain secretory cells of the gland, are not destroyed. When diseased or destroyed, diabetes results.

Robson and Moynihan state that free fat in the feces is more common than sugar in the urine, the latter not being present in most of the reported cases, and when found, Flexner shows, was only in the first few days of the history. Robson says with the history of indigestion, sugar in urine, fatty diarrhea, loss of flesh and bronzing, pancreatic disease exists; also that acute epigastric pain, followed by a circumscribed inflammation, tenderness and tumor, with indigestion, is strongly indicative of pancreatic cyst. Without an intelligent clinical history the diagnosis is guess work.

A review of reported cases and literature shows convincingly that the disease is essentially surgical, and that delay in operating is as dangerous and fatal as in appendicitis. The gangrenous cases can only be saved by promptly opening the abdomen and draining. Formerly and recently reported cases[4] by Woolsey, which seemed unfavorable for operation, amply attest this.

The general suggestion of treatment of the sac is to dissect it out if small, but in the case of a large sac this attempt is manifestly unsafe and dangerous. The extensive adhesions make it exceedingly difficult and extravasation of pancreatic juice or septic material would probably destroy the patient.

Several patients have died from this treatment; while to attach the sac to the abdominal peritoneum if not already adherent, and drain is safe, and undoubtedly the best treatment of the large cyst. Pancreatic juice out of its normal channel produces, as is well known, fat necrosis. Pancreatic disease often simulates intestinal obstruction, and the statement may be safely accepted, that if the surgeon opens the abdomen, and does not find obstruction or perforation of the stomach, but does observe fat necrosis, the pancreas is, in all probability, the source of the trouble. The small number of cases reported, and the limited experience of the profession in the treatment of this disease, will, I trust, secure your indulgence of the extended remarks.

## TAHITI FROM A MEDICAL STANDPOINT.

N. SENN, M.D.

Head of the Department of Surgery, Rush Medical College, in Affiliation with the University of Chicago.

CHICAGO.

(*Concluded from p. 889.*)

### PREVAILING DISEASES.

The average temperature of the inhabited part of the island, which can not be much less than 78 to 80 F., has a relaxing influence on the natives, and much more so on the small contingent of whites. The Europeans and Americans find it necessary every three to five years to seek for a few months a cooler climate to restore their energies and vigor. The government officials and officers are not obliged to serve for more than the same length of time, when they are relieved. It is this relaxation which, to a certain extent at least, is responsible for the great mortality of comparatively mild acute infectious diseases and the acuity of pulmonary tuberculosis among the natives. Tuberculosis of the lymphatic glands, skin, bones and joints appears to be extremely rare. The moisture-laden atmosphere and the suddenness with which the cool land and ocean breezes set in after the heat of the day is conducive to the development of rheumatic affections, which are prevalent in all parts of the island, more especially during the rainy season in midwinter. The same can be said of bronchial affections and pneumonia.

The free and unrestrained intercourse among natives accounts for the rapid spread of tuberculosis and acute infectious diseases among the entire population and from island to island. The sanitary commission, now engaged in efforts to reduce the mortality of the natives, will establish rules and regulations which will have for their object the prevention of dissemination of acute as well as chronic infectious diseases, will undoubtedly accomplish much toward the preservation of the race, but these officers will meet with stubborn opposition on the part of the natives when attempts are made, in their interest, to curtail their personal liberties. The ties of relationship and friendship among the natives are very strong, and become most apparent in case of misfortunes and sickness.

Smallpox breaks out almost every year and claims its share of victims. Vaccination is supposed to be compulsory, but the natives are inclined to escape it. Vaccination is done at the Military Hospital for all natives who can be induced to submit to it. Like in all tropical countries, tetanus is prevalent. The small native pony is found everywhere, and as the rural natives are all barefooted and spend much of their time in the jungles in impregnating the flower of the vanilla bean and gathering fruits, wounds prone to infection with the tetanus bacillus are of frequent occurrence. Malarial diseases are comparatively rare, although the plasmodium-carrying mosquitoes are numerous and aggressive, and children in the country districts are nude and the men limit their clothing to the wearing of a breechcloth. No case of typhoid has been known to have originated in the island. The exemption from this disease, so widely spread over the entire globe, in this island is due entirely to an abundant supply of the purest drinking water supplied by the numerous mountain streams. Nearly all of the inhabitants live on the coast, near the outlet of a brook or stream, where consequently there is no danger whatever of water contamination. I found three cases of typhoid fever in the Military Hospital, members of one family, who had been brought there from one of the neighboring atoll islands.

Varicose veins, varicocele and hydrocele are very common. The absence of anything like a large ulcer in many cases of large and numerous varicose veins I attributed to the toughness of the skin of the bare legs. Venereal diseases are widespread throughout the entire island, and more especially in Papeete and the nearby larger villages. Syphilis appears to pursue in the natives a mild course, as I found few instances of the ravages of the remote results of this disease. I only saw one saddle nose caused by tertiary syphilis. Leprosy is not as prevalent as in the Hawaiian Islands, but isolated cases are found in nearly all of the islands belonging to this group, being more prevalent in some than in others. Segregation has never been attempted. The lepers mix freely with the members of their family and neighbors and

4. Annals of Surgery, November, 1903.

are not shunned. I was informed that many of the lepers, much disfigured by the disease, seek an island where many of these unfortunates have founded a colony for the purpose of escaping from public gaze. Elephantiasis in its worst forms has taken a firm hold on the natives, especially the inhabitants of the nearby island of Moorea. There this disease can be studied in all its stages, from a slight enlargement of one of the extremities to colossal swellings, which, when the upper and lower extremities are affected at the same time, make it necessary for the patient to crawl on his hands and feet in dragging himself from place to place. Regarding elephantiasis as it exists in Tahiti and the other islands of

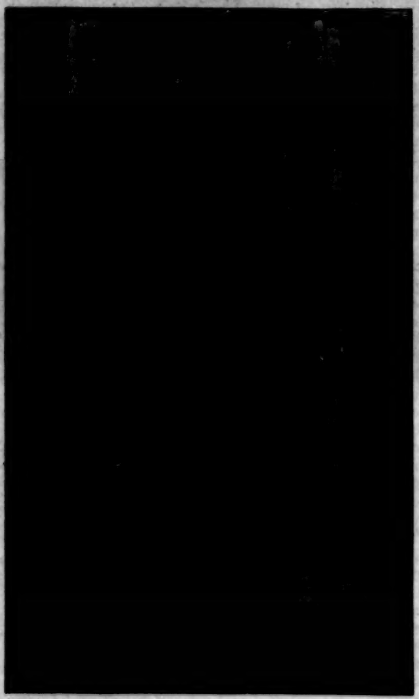

Fig. 3.—Tahitian. Elephantiasis of all extremities.

the French colony, I will make use of a few extracts taken from a valuable paper on this subject by Dr. Lemoine, recently in charge of the Military Hospital, and published in one of the government reports.[1]

According to Lemoine, who has seen much of this disease in Tahiti and surrounding islands, it may affect most regions of the body, and not infrequently makes its appearance as an acute affection with all the symptoms characteristic of lymphangitis, including quite a violent continued or remittent form of fever, which lasts two or three months. The acute form is, almost without exception, complicated by synovitis of the joints of the affected limb, which he regards as almost pathognomonic of the disease, differentiating it from ordinary forms of lymphangitis. After the subsidence of the acute symptoms and in the chronic form the disease is essentially a chronic lymphangitis, accompanied by marked enlargement of the veins. According to his observations the regions most frequently involved are the lower extremities, external genitals, and lastly, the hands and forearms. Last winter I was given an opportunity to see, at the hospital and poorhouse at Antigua, West Indies, 90 cases of elephantiasis, and not in a single one of them did the disease involve the upper extremity, while in the French colony of the South Seas this is not infrequently the case. I do not know that a satisfactory explanation has ever been given why the disease should behave so differently in the two groups of islands. Lemoine, as well as other writers on elephantiasis, has seen the disease become stationary by the removal of the patients to a colder climate. Europeans become susceptible to elephantiatic infection after a prolonged residence in tropical countries. Lemoine does not agree with Manson, who believes that

Fig. 4.—Military hospital at Papeete.

elephantiasis is caused by the filaria sanguin and suspicions that the essential etiologic factor is a yet undiscovered microbe. He made blood examinations night and day of patients under his care, and was unable to constantly detect the filariæ in their embryonic state in the peripheral blood, and consequently claims that the presence of filaria in the organism is not an infallible diagnostic indication, and that their abundance is not proportionate to the intensity of the disease.

The fact that the elephantiatics improve in colder climates he regards as another proof that filariasis is not the essential cause of the disease. In a number of cases extirpation of the infiltrated enlarged lymphatic glands was followed by decided improvement, and in the case of a Tahitian the improvement remained at the end of two years. He has also operated on a number of cases by partial excision of the mass, first on one side of the limb, then the other, with decided benefit to the patient in most of them. In some cases deep incisions through the entire thickness of the indurated mass afforded relief and resulted in diminution of the size of the swelling. He relates the details of the case of a native, 50 years old, the subject of elephantiasis of the lower limbs, that

1. Quelque's opérations palliatives applicables à l'éléphantiasis des arabes pratiquées a'Tahite, par M. le Dr. Lemoine, Médecin-Major 1pr. Classe Troops Coloniales.

he operated on in two stages several weeks apart, removing first a large section from the anterior and later from the posterior part of the swelling, and as shown by the accompanying illustrations in the report depicting the condition of the limbs before and after operation, with an excellent result. However, in some of the cases the results could not be maintained for any considerable length of time. In making the excision, the superfluous skin is excised with the underlying indurated tissues, and the skin margins reflected for some distance in order to afford sufficient room for a more liberal excision of the deep tissues.

In one case, that of a woman 38 years of age, the patient died two weeks after the second operation. Death was attributed to loss of blood and the debilitated condition of the patient when she entered the hospital.

In another case, a Tahitian, 35 years old, affected with elephantiasis of all limbs and the external genitals, he operated successfully on one of the upper limbs, the seat of an enormous swelling below the elbow. The excised mass weighed 15 kilograms. Owing to the large size of the swelling, the operation proved one of great difficulty, and owing to the tension incident to the approximation of the margins of the flaps the sutures cut through and the wound healed by granulation. At the second operation nearly the entire mass was removed, with the result that the wound healed after a prolonged suppuration and the patient was relieved of the incumbrance caused by the great weight of the swelling. The relief afforded induced the patient to request additional operations for the removal of the swellings involving other regions of the body, but as the surgeon soon after left the island his desire could not be gratified.

The paper of Lemoine is summarized by him in the following conclusions:

1. Operate before extensive muscular degeneration has taken place and prepare the limb with the utmost care to insure asepsis.

2. Study carefully the anatomic relations of the swelling and operate where the swelling is narrowest.

3. Select the skin best adapted for flap formation with which to cover the wound. Transverse flaps are more likely to survive than lateral flaps. The best plan to make the flaps is to shape them so that the wound can be sutured in the form of a Maltese cross.

4. The median flaps should be cut first obliquely from without inward, taking care to make them sufficiently thick for the excision of the mass and the cutting of the lateral flaps; make a longitudinal incision through the middle of the mass and calculate carefully the extent of the diseased tissue to be excised. The lateral flaps should be thickest at the base and well supplied with blood vessels.

5. To be absolutely sure of asepsis, avoid unnecessary manipulation and clamp rapidly all the bleeding vessels as they present themselves; tie all the veins with catgut and drain at the most dependent points.

6. Suture carefully with catgut for the deep and horsehair for the superficial sutures so as to secure the most accurate coaptation of the flap margins, as the sclerosed skin does not apply itself readily to the wound surface.

7. Avoid irritating antiseptic dressings, as they are productive of dermatitis in tropical countries, and especially if applied on skin diseased and badly cared for.

8. The first dressing should be aseptic, light and made to exercise gentle, uniform pressure by bandaging.

## HÔPITAL MILITAIRE.

The Military Hospital at Papeete is the only one in the French colonial possession of the Society Islands, numbering 168 islands and containing a population of 30,000, of whom 11,000 live in Tahiti. As some of these islands are more than 100 miles apart it is somewhat strange that the French government has not taken earlier action in establishing small cottage hospitals in a number of the larger islands, as in the case of severe injuries or sudden illness the natives of the distant islands are not within reach of medical aid and the transportation by small schooner or canoes of a sick or injured person to Tahiti from the far-off islands is necessarily slow and in many instances dangerous. The sanitary commission now stationed in the islands will, it is to be hoped, act promptly in remedying this defect in the care of the sick natives.

On the voyage from San Francisco to Tahiti I met Mr. George R. Richardson, a native of Springfield, Mass., who had lived with his native wife on the little atoll island Kaukuaia of the Tuamotu group, 168 miles from Tahiti, for the last thirty years. He was suffering from carcinoma of the esophagus, and was returning from San Francisco, whither he had gone for medical advice. His little island had a population of 150, and during his residence there he had never seen a physician, although the inhabitants were frequently in need of medical services, owing to frequent visitations of epidemic diseases and the prevalence of pulmonary tuberculosis. His native wife gave birth to sixteen children, all of whom he delivered himself, and strangely without any mishap either to mother or child. What happened on that island must have happened on the many other distant islands under similar circumstances.

The Military Hospital at Papeete is an old structure of brick and cement, situated near the western limits of the city in a large square yard inclosed by a high stone wall, surmounted by a crest of fragments of glass, which imparts to the inclosure a prison-like appearance, the severity of which, however, is much relieved by beautiful tropical trees, shrubbery and flowers in front of the entrance and in the court yard. The hospital proper comprises seven buildings, only one of which is two stories high. The hospital has accommodations for 40 patients. The officer's rooms contain two beds each; the remaining space is divided into small wards for privates and civilians. In one ward, the windows of which are strongly barred, are kept the prisoners, and another small ward is devoted to obstetrical cases. The rooms and wards are well ventilated and clean, the beds comfortable; the hospital furniture otherwise is scanty and antique.

The drug room is large, richly supplied with large jars, mortars of all sizes, herbs, roots and a complete and complicated outfit for making infusions, decoctions and tinctures, which reminds one very vividly of an apothecary shop of half a century ago. This department is in charge of a pharmacist who, besides mixing drugs, does some chemical and bacteriologic work in a small and imperfectly equipped laboratory. The operating room is an open passage way between two adjoining wards, and all it contained suggestive of its use were an operating table of immense size and decidedly primitive construction, and a tin irrigator suspended from the wall, to which was a long piece of rubber tubing of doubtful age. The hospital is well supplied with water, and contains a bathroom, a shower bath and modern closets.

The hospital is in charge of the government physician, who is always a medical officer of the colonial troops detailed for this special service, usually for a period of three years. The present incumbent is Dr. Brunati, a naval surgeon, who is about to be relieved by his successor.

From some reports I gleaned that on an average this institution takes care of about 350 patients a year. At the time of my visit the number of patients did not exceed 15, among them one in the prison ward. All of the patients were the subjects of trifling affections. The patients are being cared for by three Catholic sisters and orderlies as they are needed. Charity cases are admitted gratuitously; private patients pay from 6 to 15 francs a day.

### PHYSICIANS OF TAHITI.

There are only two educated physicians in Tahiti, Dr. Brunati, the government physician, and Dr. Chassauiol, a retired naval surgeon, the latter the only private practitioner in the whole group of islands. The government physician is privileged to practice outside of the hospital, and from this source he receives the bulk of his income. These government physicians are by no means low-priced practitioners, as is shown by one instance that came to my knowledge, when a native of limited means was charged $100 for a circumcision for phimosis. As these two physicians are the only ones in the whole archipelago constituting the Society Islands, the French colony of the Pacific, it requires no stretch of the imagination to realize that until the present time the French government has not made adequate provisions for their subjects requiring the services of a physician.

The Tahitian has not lost his faith in the native doctors, who, without any medical knowledge, practice their art. These men, with a local reputation as healers of disease, are to be found in nearly every village; they are well thought of and are influential members of society in their respective communities. Like the medicine men of our Indians, they make use of roots, bark and herbs as remedial agents, and the natives, like many of our own people, have more faith in this mysterious kind of medication than modern, concentrated, palatable drugs prescribed by the most eminent physician. To the credit of these native medicine men it must be said that they give to all afflicted who apply for treatment not only their services, but also the medicines without any expectation of reward or even the gratitude of their clients.

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## LARYNGECTOMY FOR CANCER.

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BOSTON.

Previous to 1888 the death rate for laryngectomy was very high. According to Sendziak,[1] who has collected the largest number of cases, the mortality is 35 per cent. for all cases up to 1897. If we now look at the cases operated on from 1888 to 1898, we find that the death rate has fallen to 14.5 per cent., with a corresponding fall in the number of recurrences—11.2 per cent. as compared with 30.3 per cent. This marked improvement has been due to the new methods which aim to avoid sepsis and to do away with aspiration pneumonia. These two conditions have been responsible for the majority of the fatal cases, while reflex inhibition of the heart through the superior laryngeal nerve and death from vagus degeneration deserves mention. Recurrence is less frequent because of early and more radical operating with regard for the lymphatics.

The first step in advance in operative technic was made by Bardenhauer.[2] He sutured the pharynx wall after removing the larynx, to avoid contamination of the wound by saliva, decomposing food, etc. Poppert[3] copied Bardenhauer's procedure and added a second layer of stay sutures, while Rotter[4] strengthened the pharyngeal sutures by sewing the divided muscles over in the median line. To prevent the entrance of wound secretion into the trachea, Gluck[5] separated the latter from the larynx, and turning the tracheal stump forward, sewed it into the lower angle of the wound. Foederle,[6] after total larynx extirpation, fastened the stump of the trachea to the hyoid bone, thus preserving the continuity of the trachea with the upper air passages. His patient made an uneventful recovery, and was able to leave the hospital in two weeks. Von Hippel's experience with this operation was unfortunate. In his case the upper end of the trachea became gangrenous from tension and infection, though the patient recovered after two months' illness. In view of this circumstance, few surgeons will care to operate in this way, and as far as I have been able to discover, there are only the two cases in the literature of this subject.

Opinions differ concerning the feasibility of preliminary tracheotomy. Delavan speaks in favor of it. Kocher[7] advocates tracheotomy at the time of the major operation, while Keen[8] omits it altogether. Davis[9] speaks strongly in favor of this procedure, and says that by it the trachea is fixed to the surrounding tissues, and this prevents the riding up and down of the stump in the wound that occurs when the larynx and trachea are separated. His patient died from infection, primary about the sutures uniting the stump to the skin. No preliminary tracheotomy had been done, and the constant motions of the tracheal stump prevented union and predisposed the tissues to infection. A similar case occurred in the experience of Delavan. The only objection to preliminary tracheotomy is that the patient is subjected to two operations, with several days intervening and the resulting anxiety.

Local anesthesia finds more favor abroad than in the United States. Kocher advocates cocain for all laryngeal operations. Davis used eucain in his case. Most American surgeons prefer chloroform, and there can be no doubt that conditions are more comfortable for all concerned with a general anesthetic. Whatever anesthetic is used, the superior laryngeal nerve should be cocainized to avoid reflex inhibition of the heart.

The epiglottis may be removed with the larynx or left *in situ*. Some operators remove it as a routine measure, on the ground that it may be the site of recurrence. Its removal certainly offers no difficulty.

Whether the coracoid is excised or left in place must be decided at the time of operation. Where the coracoid is removed, patients are said to swallow better. This has not been borne out in my case, where I left the cartilage in place and the patient has no dysphagia. Formerly the tampon canula was regarded as a neces-

1. Sendziak: Monatschr. für Ohrenheilk., Berlin, 1899.

2. Bardenhauer: Deutsche med. Woch., No. 21.
3. Poppert: Deutsche med. Woch., No. 38.
4. Rotter: Berlin. klin. Wochenschrift, No. 6.
5. Gluck: Deutsche Zeit. f. Chirurgie, 1900.
6. Foederle: Langenbeck's Archiv, lxiii.
7. Kocher: Operative Surgery, 1903.
8. Keen: Annals of Surgery, 1900.
9. Davis: Annals of Surgery, vol. xxxiii.

sity in performing laryngectomy, but it is now gradually falling into disuse in favor of the simpler and equally efficient Trendelenburg-Rose position, which is the Trendelenburg position with the head thrown sharply back. This exposes the trachea in the best possible manner, and prevents the inflow of blood more certainly than does the tampon canula.

Briefly stated, the present operation seems to be divided into two steps, 1, preliminary tracheotomy; 2, after a few days or weeks laryngectomy in the Trendelenburg-Rose position. Cocainization of the superior laryngeal nerve is to be remembered. Primary suture of the pharyngeal and esophageal wounds saves the patient weeks in convalescence, while turning the tracheal stump forward and sewing it in the lower wound angle obviates the necessity of a permanent canula, and in a great measure prevents aspiration pneumonia. That these are improvements over the old methods there can be no doubt, and a glance at the more recent statistics seems to convince one in that opinion.

Gluck[9] reported 34 cases with 31 recoveries, a mortality of only 8.5 per cent., while Graf,[10] of Von Bergmann's clinic, reported 9 cases with one death. Lincoln[11] reported seven cases with one death; the death resulted from vagus degeneration after two weeks.

Concerning the after-care of these cases there is little to be said. Rectal feeding is usually necessary for a few days, followed by cautious esophageal feeding, then liquid and solid food in the order given. In view of the cases of Goldstein,[12] Solis-Cohen[13] and Schmid,[14] the artificial larynx would seem to be unnecessary. In these patients a distinct pseudo-voice was developed, and Goldstein's patient could sing a simple song of more than two tones. In all of these cases there was no connection between the trachea and the pharynx, and it was thought that the air necessary for the production of sound was collected in a dilatation of the pharynx and probably the upper fourth of the esophagus. The slit representing the new larynx was formed between the tongue and the posterior pharyngeal wall. That partial laryngectomy is the operation of election there can be no doubt, but certainly the last decade has served to rob total laryngectomy of many of its terrors.

Mrs. —, aged 33 years, was seen in consultation with Dr. Plummer, Oct. 31, 1902. Her family and past history were negative. Present illness dates back about five years. During this time she has been hoarse and sometimes dyspneic. These symptoms have been worse in the past month, with marked increase in dyspnea during the last two weeks. At times she is very cyanotic, but has no dysphagia, no loss in weight, no history to indicate tuberculosis or syphilis. She has been treated by several laryngologists for "papilloma of the larynx" without relief.

*Physical Examination.*—She is well developed, well nourished and obese, with a short fat neck. Examination, except as to larynx, is negative. Urine and sputum are negative. With the laryngoscope Dr. Plummer was able to see a tumor which apparently had its base near the lower part of the epiglottis and extended backward between the false cords, covering the true cords. The tumor showed several ulcerations on its surface, and there were also ulcers on the aryepiglottic folds and on the base of the epiglottis. The vocal bands showed good motion with a fair amount of breathing space between them.

In the differential diagnosis tuberculosis, syphilis and malignant disease were considered. The first mentioned could almost be certainly excluded by the negative sputum examination, so that syphilis and malignant disease were most prominent in our minds. Since there was fair breathing space between the cords we decided to try the effect of antispecific treatment, so mercury biniodid, gr. 1/16 t. i. d., and potassium iodid, gr. 10, to be increased to gr. 30 t. i. d., were ordered.

On the following day the patient's condition was worse. She had had several bad attacks of dyspnea, was very apprehensive and slightly cyanotic. Therefore, tracheotomy seemed advisable while her condition was good, as the short fat neck promised a difficult operation under the most favorable conditions.

*Tracheotomy.*—Cocain ¼ per cent. Median incision one and a half inches long. The coracoid could not be palpated on account of the thick layer of fat. Dissection carried down to trachea, which was opened below the second ring. Tracheotomy tube inserted. Operation was rather long—20 minutes.

For several days there was considerable trouble with the tube, which was too short and kept jumping out of the trachea. When this occurred air was pumped into the tissues of the neck and the resulting emphysema and dyspnea were very alarming. The problem was finally solved by substituting a piece of a No. 28 F. rubber catheter for the canula until the longer silver canula was made. Some bronchitis followed the operation, lasting for about eight days. The antisyphilitic treatment, above mentioned, was carried out for eighteen days. At the end of this time, there was considerable increase in the size of the tumor, with some sloughing. Repeated attempts to obtain a microscopic specimen with laryngeal punch forceps failed to yield anything but sloughing tissue. The larynx was now closed by the tumor and by edema. There was no voice, and apparently no air came through the larynx. The conditions being in every way worse, exploration was decided on.

*Laryngectomy.*—Nov. 19, 1902, chloroform was administered in the Trendelenburg-Rose position. The tracheotomy wound was extended up to the hyoid bone and joined at the upper end by a transverse incision which reached to the anterior border of the sternomastoid muscles on either side. The sternohyoid muscles were retracted and the thyroid cartilage was cocainized and divided in the median line with scissors. The larynx was found filled with friable growth. As the cartilage was involved, it seemed best to remove it. The sternohyoid muscles were then severed just below the hyoid bone, while the thyrohyoid and sternothyroid muscles were separated from the cartilage at their insertions. The thyrohyoid membrane was now divided on the left and the left half of the thyroid cartilage with corresponding vocal band and arytenoid were removed *en masse*. Beginning above, the thyrohyoid ligament, stylopharyngeus, inferior constrictor and cricothyroid muscles were divided in turn. In a similar manner, the right half was removed with the epiglottis. This was readily accomplished by turning the cartilage downward and outward as the structures were severed. I then tried to bring the trachea with the coracoid forward in order to sew the stump to the skin in the lower wound angle, but found the trachea too short. This procedure was abandoned and the traction left *in situ*. The pharyngeal opening was closed with catgut sutures, and the rest of the wound packed with gauze.

Unfortunately the pharyngeal opening was not properly closed, the sutures cutting out almost immediately after recovery from the anesthetic. There was no shock to the operation, and the patient sat up in bed next day. The convalescence was uneventful, save for discomfort caused by saliva constantly exuding from the pharyngeal opening. On this account it was necessary to give esophageal feeding for two weeks. At the end of this time, the patient could eat soft solids comfortably. No dysphagia and no dyspnea. The wound was healed in three weeks, except for a small sinus. At the time of the operation, the patient was three months pregnant, and on May 7, 1903, gave birth to a baby girl weighing 7½ pounds. Delivery and convalescence were normal.

She has been well since the operation, has no dysphagia and speaks distinctly with a whispered voice. The silver canula requires occasional changing. It is now fourteen months since the operation, and there is no sign of recurrence.

10. Graf: Archiv für klinische Chirurgie, iv.
11. Lincoln: Transactions Amer. Laryng. Assn., 1903.
12. Goldstein: Verhandlungen der Deut. Gesellschaft f. Chirurgie, 1900.
13. Solis-Cohen: Archiv für Laryngologie, vol. i.
14. Schmid: Archiv für klin. Chirurgie, No. 38.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

SATURDAY, APRIL 9, 1904.

## COLLEGE CREDIT FOR MEDICAL STUDY.

The method of combining a course for the bachelor's degree in a literary and scientific college with part of the course in a professional school, which plan was described by Dr. George W. Hall in a communication in THE JOURNAL, March 5, is of especial interest and significance at the present time. This plan, proposed by President Kane of Wabash College and recently put into operation at that institution, is briefly described in the announcement for that school as follows: "A four years' course of study in which three years shall be prescribed work, all electives being reserved for the fourth year. Students taking this option will be permitted, if they so desire, to pursue their fourth year in attendance at a professional or technical school approved by the trustees of the college; retaining in the meantime their college standing and responsibility and being eligible for graduation with their class on the presentation of proper credits earned in this way. This option, it will be noted, affords the student an opportunity to secure during his fourth year such credits as will be recognized in full in both college and professional school, thus shortening by one year the aggregate time for academic and professional study."

It will be observed that the professional school selected must be approved by the trustees of the college. It is further intended that each student taking such a course shall be under the direct supervision of a member of the faculty of Wabash College, who will keep in constant touch with him and make sure that his year of work in the professional school is of such quality as to be the entire equivalent in culture value of the regular work of the senior year. It will doubtless be insisted on that the medical school chosen shall provide instruction in the fundamental medical branches of a comprehensive, thorough and scientific character.

There is a widespread and growing feeling in the medical profession, and especially among those engaged in medical education, that under the conditions now obtaining the best four years' high-school education affords an inadequate preparation for the study of medicine. On the other hand, it is clearly impracticable to require of all students the completion of the next stage in our educational scheme, namely, the possession of a bachelor's degree; indeed, it is believed by many that it would be a disadvantage to some students to spend so much time in preparatory work. In the effort to devise a satisfactory compromise between these extremes, several of the larger institutions have arranged a combined course, which has been described as the telescoping of the professional course into that of the collegiate course proper. It is possible at the present time for a student to procure the bachelor's degree, together with the degree in medicine, in six years in several institutions, among them the University of Chicago, the University of Michigan, the University of California, and Cornell University. As the course of collegiate study at these institutions was already elective, this combination has been effected without doing any serious violence to their existing regulations in reference to the bachelor's degree, it being understood, of course, that the branches which constitute the first two years of the medical curriculum are to be taught on strictly university lines by persons who are giving their whole time to teaching and research. The existence of such a plan in these larger institutions, however, places the smaller colleges at a distinct disadvantage. The temptation to students to leave them at the end of the sophomore year to enter an institution where they can complete the combined course in four remaining years, while if they were to complete the course in a smaller college it would require at least five, and in many cases six years, presents a real difficulty which the smaller college must meet in some way. It is no wonder, therefore, that some of these institutions have determined to meet this competition by providing instruction in the first two years of the medical curriculum. This fact that the example of the larger and well-equipped universities is being followed by the smaller colleges, for whom it can hardly be possible to give adequate instruction along medical lines, constitutes one of the chief objections which have been urged against the combined plan. The question for the small college is practically an economic one: To offer adequate instruction in human anatomy, physiology with laboratory work, pathology, and the various other branches usually taught in the first two years of the medical college, would be enormously expensive, when these departments must be maintained for from one or two to ten students each year. Even if an institution had abundant funds, it would be a questionable extravagance to provide instruction in these branches for so few students when the provision already made for such instruction in larger institutions is more than adequate to meet all demands. There can be little doubt that in many cases the instruction in human anatomy would be provided for by engaging the services of a local physician to give a perfunctory course in dissection in his leisure moments, and that the course in physiology and the other branches would be given, not by a physiologist, but by the professor of chemistry, physics, biology or some other branches who would have the classes in physiology added to his already abundant assignment of students.

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To the smaller colleges seeking a plan to meet the demands of its students intending to study medicine and to meet the competition of the larger universities, the scheme proposed by President Kane offers an especially satisfactory and adequate solution. In one sense it may be spoken of as a compromise, for, while the student by leaving the college at the end of his sophomore year might in some cases complete the combined course in six years, he will be able, under the plan of President Kane, to complete it in seven years, and with a larger and more thorough preparation for his professional career. The plan will bring together the colleges and professional schools in a kind of pedagogic co-operation that will be of advantage to both. Of the numerous schemes which have been proposed to meet the demands of the time for a thorough preparation for medicine, this plan of Wabash College seems to us the most sane, reasonable and satisfactory which has yet been offered for those students who begin this work in the small college.

## MOTOR PHENOMENA OF MANIA AND MELANCHOLIA.

Of the nature of the processes that underlie mental activity definite knowledge is wanting, but analogy would seem to permit the conclusion that they are comparable to the physiologic processes that take place in other organs than the brain. Like the activities peculiar to other organs, also those peculiar to the brain may be variously modified, and the resulting aberrations of function constitute the morbid processes grouped together under the general term insanity. Accordingly, in the one instance, as in the other, it is sometimes difficult to note exactly where the normal passes into the abnormal. Dr. W. H. B. Stoddart[1] records some interesting observations on the symptomatology of two forms of mental disease, namely, mania and melancholia, and he advances some ingenious speculations as to their cytology. He has called attention to the fact that melancholiacs suffer from rigidity of the muscles of the spinal column and of the large proximal joints, the movements of the wrists, fingers, ankles and toes being comparatively unimpaired. These phenomena are well defined only in severe cases, and but slight in mild cases. The rigidity is most marked in the muscles of the trunk and neck, and less marked successively at the shoulders and the hips, the elbows and the wrists; it is less marked also at the knees than at the hips, is slight at the ankles and is usually absent at the toes. The flexors are affected in more marked degree than the extensors, and the adductors in greater degree than the abductors. The attitude of the melancholiac is, therefore, one of general flexion and adduction, the shoulders being raised, owing to rigid contraction of the upper part of the trapezius. If with the melancholia there be associated some degree of restlessness or agitation, this shows itself most in the movements that are least interfered with, namely, those of the wrists and fingers, the ankles and toes.

In cases of mania, on the other hand, the movements during a state of motor excitement take place for the most part at the large proximal joints, according to his observation. In running, there is exaggerated movement at the hips; in waving the arms, the greatest movement takes place at the shoulders. The maniac shakes hands from the shoulder; the melancholiac from the wrist. The attitude of prayer is in the maniac with the hands upraised to heaven; in the melancholic with the hands clasped in front of the sternum. The typical attitude of the melancholiac is with the elbows close to the sides; that of the maniac with the elbows away from the sides. In some rare and severe cases of acute mania, however, the movements are peripheral as well as proximal, although those of the latter variety predominate.

Hughlings Jackson has put forward the hypothesis that the slow, proximal movements of the large joints are represented in the cortical motor areas in large cells, and the rapid, peripheral movements of the small joints in small nerve-cells. It is reasoned that if an irritating, stimulating product were formed within the cortical nerve-cells, there would be increased activity of the proximal movements because the large cells, having a smaller relative surface, are less well able to get rid of the deleterious substance. This condition, it is believed, occurs in mania. If, on the other hand, a depressing, paralyzing product were produced within the cortical nerve-cells, there would be weakness or paralysis of the proximal movements for a similar reason. Such a state of affairs is supposed to exist in melancholia, especially in the more stuporous forms. The same argument is applicable if the depressing influence within the nerve-cell be deficiency of nutrient matter (trophoplasm). The large cells suffer most because, having a smaller relative surface, they are less well able to absorb nutrient matter from the surrounding plasma. If the plasma contained an irritating, stimulating body, there would be greater activity of peripheral movements, because the small cortical nerve-cells have a larger relative surface exposed to the deleterious influence. These relations are encountered in cases of agitated melancholia, and occasionally also in cases of mania. Finally, if the plasma contained a paralyzing body or its equivalent—deficiency of normal nutritive and stimulating bodies—the paralysis would be more marked in the peripheral movements. These conditions are rarely present in cases of insanity, except as a result of coarse disease of the brain.

Dr. Stoddart also enters on some interesting reflections on the delusions of the two diseases under consideration. Not realizing that he is paralyzed, and finding himself unable to do the things that formerly he was able to do with ease, the patient may conclude that he is merely ill, or that his soul is lost, or that he is

1. Lancet, March 5, 1904, p. 630.

deserted by God, is eternally damned, or that he has committed the unpardonable sin. In this frame of mind he may fix on some trivial act as the cause of all of his trouble, or by a process of simple paramnesia he may even falsely accuse himself. Some patients thus come to think themselves dead, while others believe themselves altered in some way. In hypochondriacal melancholiacs the weakness, although general, appears to attract the patient's notice locally. Thus he may develop the delusion that he can not walk or stand up, or that his legs are brittle and hence made of glass. As a result of various sensations, the patient may gain the idea that his breath is gone or that his throat or bowels are permanently locked up. If the patient normally be suspicious, or if he suffer from hallucinations or illusions, delusions of persecution may develop.

In the maniac the delusions of exaltation arise in a corresponding manner from the feeling of activity that results from the stimulation of the cortical nerve-cells. The patient feels strong and capable of the most wonderful athletic feats. Hence arises the general idea of power and the development of delusions of being a duke, a lord, a king, God, or of the possession of untold wealth. The development of these delusions is, however, often modified by the occurrence of hallucinations, and then the feeling of activity is thrown into the background by perversions of the senses.

The foregoing views are interesting and ingenious, and they possess certain hypothetical value. While not susceptible of proof, they can not in the nature of things be successfully contradicted, so that, for the present at least, they may receive tentative acceptance. Function is, no doubt, merely an expression of cell-activity, and disease-symptoms are to be explained by abnormal cell action. The means of demonstration are, however, not yet available.

## WHY IS THE ABILITY OF MOTHERS TO NURSE THEIR CHILDREN DISAPPEARING?

That the ability of women to nurse their children is diminishing with great rapidity is a fact noted by all physicians, although it may be attributed to various causes. Professor Bunge of Basel has recently published[1] the results of his study into the causes underlying the loss of this important function, a loss which, he states, affects more than half of the women living in the cities of central Europe. He has collected statistics from physicians, chiefly in Germany, concerning the following points: Number of children borne by the woman; number of children she was able to nurse for nine months each—if unable to nurse, why; number of children borne by her mother; how many her mother could nurse; alcoholism in father and mother. Answers were received covering 1,629 cases, sufficient to enable Bunge to draw conclusions with safety. The women who could nurse their children without having to supplement the breast milk with other alimentation, for a period of nine months—this being the customary period in Germany—he denominates for brevity's sake "capables." The "incapables" are those who were unable to nurse any or some of their children, or who could nurse them for an insufficient length of time, or whose milk was of insufficient nutritional value. When the nursing was interrupted by a passing illness—by mastitis or a subsequent pregnancy—the case was still counted as a "capable." He did not include in the study those cases which were prevented from nursing by malformation of the nipple.

The "capables" were found to number 519, the "incapables" 1,110. Among these 519 there were 423 who could give information as to their own mothers in this respect, and with one single exception the mothers of these had also been able to nurse all their children for the normal length of time. But when inquiry was made as to the history of the mothers of the "incapables," it was found that 39.2 per cent. had been able to perform this function normally. Thus it is clearly shown that almost without exception the daughter of a mother who can not nurse her children is likewise unable to do so; and not only this, but there is an increase in the number of women unable to nurse which can not be explained by hereditary influences on the mother's side. Bunge then studied the paternal history of those "incapables" whose mothers had been "capables," and found that chronic alcoholism was present in 78 per cent. of the fathers of these women. As chronic alcoholics he classes those who drink daily more than two liters of beer or one liter of wine, and those who are notorious drunkards; 42 per cent. belonged to this last class. On the other hand, only 2.6 per cent. of the "capable" daughters of "capable" mothers had had drunkards for fathers. Examination of the histories of families of drunkards who had had several daughters showed that in many cases the younger daughters were incapable of nursing, while the older daughters were wholly or partially capable—the father having gradually undermined his health until he was at last unable to beget an entirely normal child. A further study of the family history of this same class of women revealed a connection between this loss of function and a susceptibility to nervous and psychical disturbances, for while only 1.6 per cent. of the class of "capables" were found to suffer from disorders of the nervous system, the enormous proportion of 25.9 per cent. was reached for the "incapable" daughters of "incapable" mothers.

The nursing function, therefore, seems destined to gradually disappear even without any increase of alcoholism among men. For, if it is true, as Bunge's statistics show, that this function once lost is almost never regained, then the number of these "incapables" must be larger in each generation, for there will always be alcoholic fathers to beget "incapable" daughters from "capable" mothers.

1. Virchow's Archiv., 1904, p. 185.

## THE ETIOLOGY AND PATHOGENESIS OF TYPHOID FEVER.

There is probably no important disease regarding which our conceptions have had to be changed more frequently than typhoid fever. Originally classed with typhus, it was first satisfactorily separated from that disease by Louis and his pupils, and particularly by Gerhard in this country. No great change in our conception of the disease took place from this time until the discovery of the typhoid bacillus by Eberth in 1880. From that time almost to the present the etiology of the disease has been considered as settled, but postmortem bacteriology has led us considerably to change our views as to the pathologic anatomy of the disease. The old idea of a fixed pathologic picture with intestinal ulcerations as the predominating feature has been revised, and we now know that although this picture is the usual one, the pathologic appearances, like the clinical picture, may be varied. Within the last few years infections with closely allied germs, which have been classed as paratyphoid or paracolon bacilli, have been reported from time to time, and the question of importance at the present is the relation of these closely allied infections to one another.

In a recent paper Juergens,[1] who has had a wide personal experience with typhoid fever and with paratyphoid infection, discusses the relationship between the two at length. He points out that most of the writers who have described paratyphoid infections have endeavored to demonstrate that these cases can be distinguished from true typhoid fever by the clinical course of the infection, the pathologic findings, and the use of the serum reaction. Juergens' paper is an analysis of the reported cases of paratyphoid infection, having in view the proving or disproving of these assertions.

Concerning the clinical picture, Juergens concludes that it is impossible to differentiate typhoid from paratyphoid infections. Both infections may show varied clinical pictures. In some cases of paratyphoid infection every feature of typical typhoid is duplicated, and, on the other hand, cases of paratyphoid infection running a septicemic course can be paralleled by the now well-recognized cases of typhoid septicemia. Not only the disease itself, but also the complications and sequelæ, are the same in the two infections; venous thrombosis, pneumonia, cystitis, hemorrhage from the bowels and even relapses have been seen in paratyphoid cases. The statement that the paratyphoid infections usually run a milder course, which is made by most writers on the subject, Juergens does not consider to be upheld by the available facts. As he points out, only one or two extensive outbreaks of paratyphoid infection have been reported, and outside of these only scattered case reports are to be found. It is true that the paratyphoid outbreaks so far reported have been mild, but some reported epidemics of typhoid are equally mild, and the number of single cases is too small to enable a reliable judgment as to this point to be formed. The postmortems on paratyphoid cases have been very few in number, but none of them shows findings which are incompatible with infection with the typhoid bacillus.

In considering the serum reaction, Juergens claims that a diagnosis based on this alone is entirely unjustifiable in the light of our present knowledge of group reactions. He points out that the serum of many paratyphoid cases gives a well-marked reaction with the typhoid bacillus or the colon bacillus, and while there may be a quantitative difference in the dilutions necessary to produce the reaction with these different organisms, this does not suffice to differentiate the different infections, recent research having shown that specific reactions can not be differentiated from group reactions by quantitative measures alone.

Juergens' conclusions can be readily gathered from the preceding remarks, and it must be added that as a result of these conclusions he discards many of the reported cases of paratyphoid infection as being based on insufficient or unreliable data. He requires for a positive diagnosis of paratyphoid infection the isolation of the paratyphoid bacillus from the blood or excreta if possible, and failing this not only the serum reaction, but also the Pfeiffer test on animals. Juergens deprecates the prevalent grouping of typhoid and paratyphoid infections as separate diseases.

1. Zeitschrift f. klin. Med., vol. xxv, Nos. 1-2.

## THE INHERITANCE OF THE DISPOSITION TO TUBERCULOSIS.

Since the beginning of the bacteriologic era our views as to the inheritance of tuberculosis have undergone several changes. When the tubercle bacillus was first discovered it looked as though the matter was greatly simplified and would soon be cleared up. At first it was thought that the tubercle bacillus itself was handed down from generation to generation, but pathologic experience soon disproved this, and even at the present day the reported cases of true inheritance of the germ can almost be counted on the fingers. The appreciation that the bacilli themselves were but rarely transmitted led to the formulation of the theory of the transmission of the soil, as the French have called it. It was taken for granted that some structural peculiarity was transmitted which favored the multiplication of the tubercle bacillus in the tissues of the unfortunate individuals who possessed it. This view is, in fact, the prevailing view at the present time, though of late years certain observers have been placing more and more stress on the importance of contact with infected cases, and still others have recently brought out facts pointing to the possibility of latent inherited tuberculosis.

In a recent article, Burckhardt[1] has recorded the results of his comparison of two hundred and fifty tuber-

1. Zeitschrift für Tuberculose, vol. v, No. 4.

culous and two hundred and fifty non-tuberculous individuals, as regards their family history. In a brief review of recent articles bearing on the subject, he points out that the work of Kuthy, who found no difference between the family histories of tuberculous and non-tuberculous subjects, is not reliable on account of the fact that this observer did not compare equal numbers of the two classes of cases. In his study, Burckhardt considered only relatives closely related to his cases. He collected the histories of the grandparents, the parents and their brothers and sisters, the brothers and sisters of the patient, and, if married, the husband or wife, and the children. According to Burckhardt, this would mean on the average the consideration of fifteen relatives. His results at first glance seem to be decidedly in favor of inheritance of the disposition, as he found that there was a family history of tuberculosis in 66 per cent. of the tuberculous cases, and in only 42 per cent. of the non-tuberculous.

Further analysis shows, however, that the results when closely scrutinized suggest a different interpretation. Burckhardt found, for example, that if we consider the percentage of tuberculosis in the brothers and sisters of patients, or in the mother, there seems to be strong evidence in favor of hereditary transmission. Thus in his two hundred and fifty tuberculous cases, 38 per cent. had one or more brothers or sisters with the disease, while of the two hundred and fifty non-tuberculous, only 18 per cent. had brothers or sisters with the disease. In the tuberculous cases there was a history of tuberculous disease in the mother in 15.2 per cent., while such a history was present in only 6.8 per cent. of the non-tuberculous cases. When the history as regards the father was considered, however, it was found that tuberculous and non-tuberculous individuals showed an almost equal percentage of infection, the tuberculous having 14.4 per cent. of tuberculous fathers, and the non-tuberculous 11.6 per cent. As Burckhardt points out, these facts may be interpreted to mean that transmission takes place by contact with infected cases, this explanation being just as logical as the assumption of heredity of the soil, as the members of a family are much more likely to be brought into contact with their mother or their sisters and brothers than with their father, who is away from home at his work. While Burckhardt seems to favor the importance of direct transmission by contact, he does not believe that it can be stated at present that heredity is of no importance.

The question as to just what its importance is must be solved by further studies, and the line of investigation suggested is that outlined by Schrötter, viz., the investigation of the descendants of tuberculous individuals from the anatomic, physiologic and serologic standpoints. The questions are still far from being satisfactorily solved; in fact, new investigation often seems only to open up new problems and to indicate unsuspected possibilities.

### THE PROTOZOA IN DISEASE.

The *Century Magazine* for April contains two articles that are in different ways of medical interest. In the first Prof. Gary N. Calkins of Columbia University furnishes a very readable account of the protozoa in disease and gives in an intelligible manner the general facts in regard to the development of these disease-producers with which we are specially concerned. The article is illustrated by original drawings from the author's own pen and may be considered as authoritative, though appearing in a popular magazine. He assumes perhaps a little too much in admitting—as it appears to us that he does—that the protozoan origin of scarlet and yellow fevers has been discovered, but that does not detract from the general value of his article. Furnishing as it does in a brief but very comprehensible way the main biologic facts in regard to pathologic sporozoa which are probably not known to the great majority of physicians, the article is well worth reading by medical men.

### WEIR MITCHELL ON GEORGE WASHINGTON.

The other contribution in the *Century*, referred to above, is by Dr. Weir Mitchell, whose literary achievements have widened his reputation so well earned by his work in medicine. It is in a measure a sort of historical novel, as it is in the form of an assumed autobiography of George Washington. We do not see that Dr. Mitchell has attempted to cultivate or imitate Washington's style as we know it from his state papers and addresses. We doubt whether Washington could have expressed himself anywhere nearly as well as Dr. Mitchell does it for him. Still he might have very naturally thought out the same thoughts and the paper shows a very close study of the early and family history of the father of his country. Medical men will find of interest this latest contribution of a colleague who has reflected honor on the profession in more ways than one.

### EXPERT WITNESSES APPOINTED BY THE COURT.

The method of appointing expert witnesses has been so much discussed pro and con in every way that court decisions which throw any light on it are welcome. In a recent case in Kentucky[1] the appellant pleaded as an error that the two medical witnesses who testified in the case regarding the extent of the plaintiff's injuries were appointed by the court, and that the attorney for the other side had been allowed to make this fact known to the jury. The Court of Appeals decided that the physicians had been appointed by the court under the large discretion which it possessed. The question was not a matter as to how they came to know the facts, but as to the truth of their testimony, and the knowledge on the part of the jury that the witnesses came from the impartial appointment of the judge could not prejudice the case against the plaintiff. It would appear from this that a precedent has been fairly set in that state for the appointment of expert witnesses in damage cases by the court, and for the doing away with partisan experts, about which jurists have said so much in discussion and criticism. Medical expert testimony is no

1. See page 973.

worse than any other expert testimony, but it suffers by the fact that the courts usually recognize any *voidisant* expert as perfectly competent to act in that capacity and the juries are not supposed to be discriminating as to the quality of those who thus represent themselves. If the courts can make an intelligent appointment of medical experts the difficulty will be largely overcome. It remains to be shown that the judges know who are and who are not experts.

## MARKED SOMNOLENCE OF LONG STANDING AS A SYMPTOM OF SYPHILIS.

Sleep is a condition of diminished irritability of the entire nervous system, during which opportunity is afforded for recuperation from antecedent fatigue. The exact factors on which sleep depends are not definitely known, although it may be surmised that they are in part chemical or metabolic and in part circulatory or vascular. The amount of sleep required varies in different individuals, and in the same individual at different times. Deficient sleep or insomnia is observed in association with a number of disorders of the nervous system, directly or indirectly; abnormal somnolence more rarely under analogous conditions. A most extraordinary instance of prolonged somnolence, probably of hysterical origin, has recently been placed on record,[1] the patient, a woman, having slept, as recorded, for seventeen years. Somnolence further occurs occasionally as a symptom of syphilitic disease of the cerebral blood vessels, and an unusual case of this character is reported by Mr. William B. Bennett.[2] The patient was a man, thirty-four years old, with a history of the initial lesion of syphilis eight years previously, who presented aphasia, had several convulsions and exhibited marked somnolence, both by day and by night, covering a period of five months. Headache and hemiplegia were conspicuously absent. Complete recovery followed active treatment with mercury and iodin. The lesions are believed to have consisted in extensive syphilitic inflammation of the cerebral arteries, without thrombosis or embolism, but possibly with spasm of the arteries.

## THE PROPHYLAXIS OF MALARIA.

Physicians know how difficult it is to persuade the public to adopt preventive measures in preventable diseases. It generally needs an extensive outbreak and considerable loss of life to impress on the mind of the average citizen the necessity for prophylactic measures. If this is true of diseases which have a considerable mortality, it is easy to see why, in a disease like malaria, which seldom results fatally in our climate, so few systematic attempts at stamping out the disease have been made. And yet the comparatively small amount of experience collected in the last few years tends to show that a district can be almost entirely rid of this disease in a relatively short time and at a relatively small expense. Two methods are at our disposal—that suggested by Koch, which consists in combating the disease in the human being, and the method mostly used by the French and English speaking peoples, which consists of destroying the intermediate host—the mosquito—and in protecting human beings against its bites. Two recent papers by French authors[1] give some idea of the relative effectiveness of the two systems. It would seem that the method usually employed in this country is much more effective than Koch's method. The two main reasons why Koch's method is difficult to enforce are the difficulty of getting people to take quinin when they think they are well, and the impossibility of detecting larvate cases of the disease even with the aid of a blood examination. A small amount of work has been done in this country attempting to exterminate malaria, but the main malarious districts as yet remain almost untouched. It is to be hoped that in the near future the work will be taken up in a systematic way.

## THE MARAGLIANO LECTURE.

The results of the studies of Professor Maragliano, which have been fully reported from time to time in THE JOURNAL,[2] are very fully summarized in the latest Phipps lecture,[3] which was to have been delivered March 28. Its statements in detail will be of interest to American readers, though the facts and views there expressed have been already given in foreign journals. Behring's experiments with vaccination on calves against tuberculosis are well known, but Professor Maragliano has gone further, and he reports the results of attempts to immunize human beings by the use of vaccine material containing no living bacteria. Of course, the test of such immunity against cultures of living bacteria can not be made in our species. Behring's results in calves do not warrant the application of his method to the human subject, and Maragliano is evidently not the man to engage in dangerous experiments. Still further, he finds that the protective elements of the serum are capable of being absorbed through the mucosa of the digestive tract, and that by ingestion a certain degree of immunity can be acquired. This fact seems to be one of practical importance, as he says why "instead of ordinary milk should we not use the milk of immune animals," and thus produce a passive immunity which experimental results have already warranted us to expect. Such experiments can certainly be tried, and it only requires the general practice of immunization of our domestic animals to ensure its practicability, and it is to be hoped also its success. While many of us will accept Professor Maragliano's statements with some reserve, considering him perhaps as showing the enthusiasm of the discoverer and exceeding the assured limit of actual results in his views, nevertheless there is much in his lecture that deserves our careful consideration, and its publication in our language can hardly fail to have a useful influence. His desire that the experiments with feeding with immunized milk and meat should be tested on a broader scale in this country, where, as he believes, the facilities for such are so much greater than abroad, will, we hope, be gratified, at least to a certain extent.

1. Herbst: Berliner klin. Wochenschrift, Feb. 5, 1904.
2. British Medical Journal, March 12, 1904, p. 504.

1. Edmond and Etienne Sergent: Annales de l'Institut Pasteur, February, 1904.
2. THE JOURNAL, Nov. 21, 1903. See report of one year's work in THE JOURNAL, Jan. 2, 1904, pp. 70-71.
3. See Medical News columns in this issue and the *N. Y. Medical News*, April 2.

### A SIMPLE BLOOD TEST FOR TYPHOID.

In a recent number of THE JOURNAL we noticed editorially Ficker's test for typhoid with a solution of dead bacilli. It was also stated that the preparation and instruments were put up by Merck of Darmstadt for ready use. In the last number of the *Journal of Infectious Diseases*, Ruediger reports the results with typhoid culture bouillon, in which the bacillus had been killed by formalin 1 c.c. to 100 c.c. of bouillon, and the method seems to be fully as simple and practical as that devised by Ficker. It is, therefore, in the power of any one who can make cultures from typhoid bacilli to provide his own solution, and Ruediger's paper shows the peculiar sensitiveness of these dead cultures and mentions in a footnote that a good reaction was obtained with cultures that had been killed just one year before. The process is a very simple one: Add four drops of blood to 2 c.c. of a 1 to 500 solution of formalin in distilled water. When laking is complete, add 4 c.c. of the dead culture to 1 c.c. of the blood solution and set the two aside. If agglutination takes place the dead organisms collect in clumps, and within an hour or two are seen as a flocculent precipitate settling toward the bottom, leaving the bouillon clear at the end of twelve to twenty-four hours. Dried blood can be employed as well as fresh blood, and the only special precaution in the test is to shake the culture before using it to stir up the organisms from the bottom where they are likely to settle. One or two test tubes and a microscope are all that are necessary. The method seems to be even simpler than the Ficker one, which Ruediger does not mention, and is within the reach of every practical clinician.

## Medical News.

### ALABAMA.

**Smallpox.**—Huntsville reports 29 cases in its pesthouse, with no recent deaths. The disease is believed to be under control. ——The disease is reported epidemic in Marshall County, north of the Tennessee River.

**Commencement.**—At the tenth annual commencement exercises of Birmingham Medical College, April 2, Capt. Richmond Pearson Hobson, late U. S. Navy, delivered the address of the evening, and Dr. Benjamin L. Wyman conferred the degrees.

**Seeks Mandamus.**—The Mobile Medical College has applied for a mandamus to compel the state auditor and state treasurer to pay the first installment of $5,000 on the $20,000 appropriated by a bill passed by the last legislature, but which was not signed by the governor.

**Graduating Exercises.**—The closing exercises of the thirty-eighth annual session of the Medical College of Alabama, Mobile, were held March 31. Forty-four diplomas were issued. The president of the university conferred the degrees. The attendance during the session was the largest in the history of the college. The recent enlargement of its laboratories and equipment for pathologic and chemical studies are in line with the policy of the institution.

### CALIFORNIA.

**Inspection of School Children.**—On April 1, inspection of the health conditions among San Francisco school children was inaugurated by a corps of volunteer medical inspectors.

**February Mortality.**—The deaths for February numbered 1496, equivalent to an annual mortality of 17.04 per 1,000. Tuberculosis caused 247 deaths; heart disease, 184; pneumonia, 169; cancer, 72; and bubonic plague, 5.

**Society Endorses Medical Efficiency Bill.**—The Santa Barbara County Medical Society, on March 15, adopted resolutions favoring the bill to increase the efficiency of the medical department, U. S. Army, and urging that the provisions disqualifying officers of the medical reserve corps from retirement, retirement pay and pensions, be stricken out.

**New Cottage at Agnews.**—The trustees of Agnews State Asylum have adopted the plans for the proposed new cottage for the treatment of the insane at that place. The cottage is to cost $37,965, and will accommodate 100 patients.

**Personal.**—Dr. John R. Colburn, Los Angeles, has been made chief surgeon of the San Pedro, Los Angeles and Salt Lake Railroad, vice Dr. Charles F. Taggart, resigned.——Dr. William M. Lawlor has been made receiving clerk at the San Francisco City and County Hospital.——Dr. George F. Reinhardt has succeeded Dr. Frank H. Payne as health officer of Berkeley.

### ILLINOIS.

**Monmouth Hospital Open.**—The new Monmouth Hospital opened for the reception of patients, April 1.

**Diseases Close Schools.**—Smallpox has caused the closure of the public schools of Marseilles.——Philo, Emden and Divernon schools are closed on account of scarlet fever.

**Surgeon Resigns.**—Dr. George N. Kreider, Springfield, major and surgeon, assigned to the Fifth Infantry, I. N. G., has resigned.——Dr. Arthur F. Wilhelmy, Decatur, has been designated to fill the vacancy on the examining board of the regiment, caused by Dr. Kreider's resignation.

**How the Government Deals with Fraud.**—"Dr." J. F. Braun, Mascoutah, who has been conducting a so-called "health home," and who advertised to cure many ills without medicine, and by absent treatment, has been sentenced to six months' imprisonment and to pay a fine of $500 and costs by the United States Court at Cairo for using the mails for fraudulent purposes. The State Board of Health has instituted several suits against Braun during the past year, but was able to obtain a conviction in only one instance. It was found necessary, therefore, to obtain the aid of the federal authorities.

### Chicago.

**Smallpox.**—There are at present 11 cases of smallpox in Chicago, six of which are in one Dowieite family, which refused vaccination.

**Off for Europe.**—Dr. G. Paull Marquis, lieutenant colonel and assistant surgeon general, sails April 9, with his family, for a stay of seven months in Vienna.——Dr. Ludvig Hektoen sailed for Liverpool on the *Etruria*, April 2.

**Antitoxin Stations.**—Diphtheria antitoxin stations have been established in 36 localities throughout the city. At these stations physicians may obtain antitoxin free for indigent patients, and at low rates for those able to pay. Culture outfits may also be obtained at these stations.

**Decrease in Air-Borne Diseases.**—During the first quarter of 1904 30 per cent. fewer children between one and five years of age died than in 1903. The almost continuous snow blanket reduced the prevalence of the air-borne diseases of childhood, so that there were 21 per cent. fewer deaths from diphtheria and 42 per cent. fewer from scarlet fever, while there were but 3 deaths from measles and 4 from whooping cough this year as against 60 and 116 respectively last year.

**Deaths of Quarter, Month and Week.**—The deaths for the quarter were 7,875, a decrease of 181 from those of 1903, and equivalent to an annual death rate of 18.77 per 1,000. Of these, 1811, or nearly 23.6 per cent., were due to pneumonia, an increase of 170 over the preceding year. Consumption caused 858 deaths; heart disease, 582; Bright's disease, 478, and violence, 441.——During March the deaths numbered 2,609, a decrease of 104, as compared with March, 1903, and equivalent to an annual rate of 15.74 per 1,000. Pneumonia was, as usual, in the lead, causing 621 deaths, or 23.76 per cent. Consumption caused 332 deaths; heart disease, 181; Bright's disease, 167, and violence, 156.——During the week ended April 2, 576 deaths occurred, equivalent to a yearly mortality of 15.40 per 1,000. The percentage of deaths from pneumonia was 21.53. The deaths from pneumonia were 124; from consumption, 80; from heart disease and Bright's disease, each 36, and from violence, 33.

### KANSAS.

**Personal.**—Dr. J. F. McNaughton, assistant physician at the Topeka State Hospital, has resigned and will practice in Cove City.

**Asks Exemption from Taxation.**—Dr. Henry H. Keith, Topeka, has petitioned the board of commissioners of Shawnee County to exempt his private hospital from taxation, on the

ground that he does $100 worth of charity work each month, and that he does not receive state aid.

**Commencement.**—The tenth annual commencement of the College of Physicians and Surgeons was held in Kansas City, March 31. A class of 11 was graduated; the annual address was delivered by Lowell L. McAfee, LL.D., and the degrees were conferred by Hon. W. H. Brown, assisted by Dr. Ellery M. Hetherington, secretary of the faculty.

**Second Munificent Gift.**—Dr. Simeon Bell, Rosedale, has given the University of Kansas 440 acres of land in Jackson and Cass counties, Missouri, stipulating that if $25,000 is not realized from the sale of the land the difference will be made up in cash. This is Dr. Bell's second gift to the university, and is for the maintenance of a hospital to be established in Rosedale as a memorial to Dr. Bell's deceased wife.

## KENTUCKY.

**Smallpox Epidemic.**—The secretary of the State Board of Health reports serious outbreaks of smallpox at Earlington, Springfield and Burlington.

**Reynolds Wins Suit.**—Dr. Dudley S. Reynolds, Louisville, has been given judgment for $7,750 against the Louisville and Nashville Railroad for damage sustained by him which caused pain and loss of practice for a time.

**Medical Knowledge for the Masses.**—The Lexington Medical Society has appointed a press committee to instruct the public through the medium of the press in the laws of hygiene and sanitation. This committee has instructions to prepare papers along practical lines, to be read before the society, which if approved will be given to the lay press for publication.

**Personal.**—Dr. James C. Carrick has been elected president of the board of health, and Dr. Nathan R. Simmons, health officer of Lexington.——Dr. Addison S. Robertson has succeeded Dr. Charles R. Garr, as health officer of Flemingsburg.——Dr. Heman Humphrey, Louisville, has been selected as interne in the City Hospital.——Dr. James M. Grant, Petersburg, has been made chairman of the Boone County Board of Health.

**Commencements.**—Louisville Medical College held its commencement exercises, March 26, graduating a class of 61. Dr. W. F. Sheridan delivered the address of the evening.——Diplomas were awarded to 36 at the annual commencement of the medical department of the University of Louisville, March 31. Dr. James M. Bodine presented the class to Hon. T. I. Burnett, who conferred the degrees. Dr. Henry A. Cottell delivered the faculty address.

## MARYLAND.

**Baltimore Personal.**—Dr. C. Wilbur Lurbin of the City Hospital staff has gone to Harrisburg, Pa., to engage in practice.

**Half a Million to Hospital.**—John D. Rockefeller has given $500,000 to Johns Hopkins Hospital as an addition to the endowment fund to replace the loss suffered in the great fire in Baltimore. The gift has been accepted by the trustees of the institution.

**Baltimore Deaths.**—There were 202 deaths last week, an annual rate of 18.45 per 1,000. Consumption and pneumonia each caused 31 deaths; grip caused 9 and bronchitis 6. Bright's disease came next to pneumonia and consumption with 16 deaths. The gradual increase in Bright's disease is noticeable.

**Mumps Germ Said To Be Found.**—It is said that Dr. S. Darling, resident pathologist at the City Hospital, Baltimore, working in Prof. William Royal Stokes' laboratory, has probably discovered the germ of mumps. It is a diplococcus, similar to one described by Laveran and Catrin in 1893, but not connected by them with mumps. The organism was obtained from an autopsy on a child who died from the uncomplicated disease. It was obtained in pure culture on blood serum.

**The Omnibus Bill Amended.**—In the passage of the omnibus appropriation bill (the medical items of which were given in THE JOURNAL last week), through the house of delegates, amendments were adopted granting $4,000 annually to each of the following institutions: University of Maryland; College of Physicians and Surgeons; Baltimore Medical College, and Maryland Medical College. It also added to the appropriation of the Baltimore Eye, Ear and Throat Hospital, $10,000 for an additional building; $1,500 a year to the Woman's Medical College, and Good Samaritan Hospital; $1,200 per annum to the Emergency Hospital at Frederick, and gave $15,000 to Hospital for Consumptives.

**Ehrlich to Give Herter Lectures.**—The authorities of the Johns Hopkins University announce the subjects of the Herter course of lectures to be delivered by Prof. Paul Ehrlich, the director of the Royal Prussian Institute of Experimental Therapeutics at Frankfort-on-the-Main, April 12, 13 and 14. They are: (1) "The Mutual Relations Between Toxin and Antitoxin"; (2) "Physical Chemistry vs. Biology and the Doctrines of Immunity"; (3) "Cytotoxins and Cytotoxic Immunity." The lectures will be in German, but the audience will be furnished with English translations, so that the speaker can be followed more easily. The course of lectures will be open to the general public, as well as to physicians. The Herter course was founded in 1902 by Dr. and Mrs. Christian Herter of New York City, who donated $25,000 for the purpose. They are to be delivered annually by some eminent physiologist or pathologist.

## MASSACHUSETTS.

**Liberal Village Appropriation.**—Brookline has appropriated $34,000 for the public health department and $9,500 to maintain its bath house for the coming year.

**Boston's Contributions to Insane Hospitals.**—During the past year Boston has sent 200 patients to the Hospital for the Chronic Insane on Long Island; 657 to the state hospitals at Tewksbury, 58 to the Observation Hospital, 134 to insane hospitals, and 31 to the State Hospital for Dipsomaniacs.

**Hospital Music Fund.**—The Hospital Music Fund will provide music for various hospitals and homes for children, cripples and invalids each Sunday till May 1. Their total contribution to such institutions during this season in Boston, Cambridge, Somerville, Brookline and Chelsea has been 52 concerts. Dr. John Dixwell is in charge.

**Personal.**—Dr. Ambrose J. Gallison of Franklin has been appointed assistant medical examiner of the sixth Norfolk district.——Dr. George L. Tobey, Clinton, has been elected chairman of the town board of health.——Dr. Charles F. Branch was elected chairman of the Amherst Board of Health.——Dr. Charles S. Holden, Attleboro, has been reappointed medical examiner for the Bristol district.

**Disease and Death.**—The total number of deaths reported to the Boston Board of Health for the six weeks ended April 2 was 1,420, an increase of 42 over the corresponding period of last year, and an average weekly increase of 20.45. There were 279 cases of diphtheria, with 27 deaths; 161 of scarlet fever, with 6 deaths; 45 of typhoid fever, with 11 deaths; 1,009 of measles, with 33 deaths, and 291 of tuberculosis, with 198 deaths. Pneumonia caused 254 deaths; whooping cough, 5; heart disease, 138; bronchitis, 42; and marasmus, 18. Of those reported 255 were under 1 year old, 381 under 5, and 303 over 60 years of age.

## MICHIGAN.

**Epidemic Typhoid in Escanaba.**—Escanaba is now conservatively estimated to have 200 cases of typhoid fever, and a large number of cases of so-called "winter cholera."

**Fire at Escanaba Hospital.**—In a fire at the Delta County Hospital, Escanaba, more than sixty patients were driven out of the buildings by the flames into the snow, to neighboring houses, where they were cared for.

**Gift for Care of Consumptives.**—Miss Helen May Wells, Saginaw, has tendered to the trustees of Saginaw General Hospital, $30,000 to be used in the construction, equipment and maintenance of one or more cottages for the treatment of consumption, as a memorial to her father and mother.

**Comparative Morbidity.**—For February, 1904, compared with the preceding month, typhoid fever, measles, cancer and whooping cough were more prevalent, and pneumonia and remittent fever were less prevalent. For the same month, compared with the average for February in the last ten years, consumption, typhoid fever, measles, diphtheria and smallpox were more than usually prevalent; and pneumonia, erysipelas, intermittent fever, inflammation of bowels, remittent fever, whooping cough and cholera infantum were less than usually prevalent.

**February Mortality of Michigan.**—The total number of deaths reported during February was 3,389, an increase of 263 over the preceding month. The death rate rose from 14.7 per 1,000 in January to 17.1 in February. Important causes of death were as follows: Tuberculosis, 189; typhoid fever, 42; diphtheria and croup, 57; scarlet fever, 32; measles, 21; whooping cough, 27; pneumonia, 487; influenza, 195; cancer, 128; accidents and violence, 175. There were 3 deaths from smallpox, and one death from chickenpox was reported from Detroit.

**Free Treatment for Deformed Children.**—Announcement has been made that any child of Michigan birth born deformed is entitled to free treatment at the hospital in connection with the medical department of the University of Michigan, Ann Arbor, on the following conditions: 1, that the physician present

at the child's birth will certify that he was so present, that the child was born deformed, and that in his judgment it can be helped by treatment; and 2, that the mayor of the city, the president of the village, or the supervisor of the township in which the child lives, will order the child cared for at the hospital.

**The Most Dangerous Communicable Diseases.**—Meningitis was reported present in Michigan during February at 10 places; whooping cough at 20 places; typhoid fever at 87 places; diphtheria at 97 places; pneumonia at 109 places; measles at 129 places; smallpox at 131 places; scarlet fever at 162 places; and consumption at 212 places. Meningitis was reported present at 2 places more; whooping cough at 2 places less; typhoid fever at 6 places less; diphtheria at 4 places less; pneumonia at 11 places more; measles at 27 places more; smallpox at 9 places more; scarlet fever at 33 places less; and consumption at 17 places more, in the month of February, 1904, than in the preceding month.

**Warning to Cities and Villages Having a General Water Supply.**—The bulletin issued by the State Board of Health for the month ended Feb. 27, 1904, indicates that typhoid fever was much more prevalent than the average for the corresponding month in the ten preceding years. Of the reports received more than twice the average proportion stated the presence of the disease. A contamination of the water supply would account for the unusual prevalence of this disease. In winter that does not usually occur in country districts, the contents of privies being frozen so they can not leach into wells. The unusual reports of typhoid fever came from cities having a general water supply. The inference is that these places are using water from a polluted reservoir, river, or lake, and it is earnestly suggested that the local authorities should promptly notify the citizens to boil the drinking water, so that the recent fatal experience at Butler, Pa., may not be duplicated in Michigan.

## MISSOURI.

**To Check Urban Tuberculosis.**—The committee of 30 appointed at a recent meeting of the St. Louis Society for the Prevention of Tuberculosis met, March 25, and discussed plans for permanent organization. A subcommittee of five, of which Drs. William Porter, George M. Tuttle and Henry J. Schenk are the medical members, was appointed to draft plans for permanent organization.

**May Not Prescribe and Also Dispense Whiskey.**—In the case of Dr. Thomas S. Manning, Vandalia, who having been fined $100 for violating the drug dramshop law, appealed on the ground that he had the right as a physician to prescribe liquor, and as a druggist to fill his own prescription, the Court of Appeals has decided against the appeal, and sustained the decision of the lower court.

**Graduate at St. Joseph.**—Ensworth Medical College graduated a class of 19, March 29, Dr. Thomas H. Doyle, president, presenting the diplomas, the faculty address being delivered by Dr. John M. Bell, and the address on behalf of the citizens by W. B. Norris.——A class of 8 received diplomas at the commencement exercises of the Central Medical College, April 1. Dr. Albert L. Gray presided; Dr. O. Beverly Campbell delivered the faculty address, Samuel I. Motter the address on behalf of the citizens, and the president, Dr. Thompson E. Potter, conferred the degrees.

**Malpractice Limitation.**—At the meeting of the Kansas City Academy of Medicine, February 20, Dr. Lewis B. Sawyer read a paper on "Civil Malpractice Limitations." He commented on the absence of specific legislation on this subject, and explained that it was governed by the statutes controlling torts, which in a general way include damage suits of the character under consideration. This rather loose regulation allows complainants to bring suit any time within five years after the alleged injury or injustice has been inflicted. The essayist, who is also an attorney, believes that the ends of justice would be better served by a specific statutory limitation of one year.

## NEW YORK.

**Hospital Strife Ended.**—Commissioner McAdoo has redistributed the ambulance territory of St. Mary's and Jamaica hospitals. This settles a dispute of long standing.

**High Mortality.**—The average number of deaths reported by the State Board of Health was about 440 daily during February, an average of 90 more per diem than during 1903.

**March Deaths and Diseases.**—The State Department of Health reports that there were 12,749 deaths in the state during March, an average of 440 a day. The total exceeds by 2,000 the average for March for five years. Pneumonia caused 1,220 deaths. Smallpox is reported in Cattaraugus, Chautauqua, Erie, and several other counties, but the disease is less active than a month ago.

**Tenements and Tuberculosis.**—The following committee has been appointed by the Buffalo Charity Organization on Tenements and Tuberculosis: Dr. Peter W. Van Peyma, Frank Carter, George W. Gillette, John D. Larkin, Jr., Dr. Ludwig Schroeter, and Giovanni Banchetti. Dr. John H. Pryor is advisor to the committee. Dr. William C. Callahan has been appointed to procure material on which the committee can act.

**New Bills.**—Assemblyman McMannis has introduced a bill authorizing the appropriation of $20,000 for the New York Eye and Ear Infirmary.——Assemblyman DeGroot has introduced a bill asking for the appointment of a commission to examine the marshes on Staten Island and their effect on public health, the commission to consist of the state commissioner of health, state engineer and surveyor, the commission of health of New York City, and four men to be appointed by the governor.——The assembly passed the bill providing for the increase of salaries of all state hospital employes who are not affected by the increase made last year. As a result of the increase in wages made last year, an appropriation of about $30,000 has had to be made in the annual supply bill.

**Personal.**—Dr. Sarah R. Adamson Dolley, Rochester, the second woman in this country to receive a medical diploma, celebrated her diamond birthday a few days ago, when she was presented with a diamond brooch by her professional associates. She followed her profession for 40 years.——Drs. Percy L. Lang, Waverly, Daniel B. Murphy, Rochester, Pearse Bailey, New York City, and George Elmer Gorham, Albany, were appointed managers of the Craig Colony for Epileptics by Governor Odell.——Dr. James Wood, Mount Kisco, and Dr. Charles H. Turner, Albany, were appointed managers of the New York State Reformatory.——The Rt. Rev. Henry C. Potter, bishop of New York, was appointed manager of the New York State Hospital for the Care of Crippled and Deformed Children.——Dr. Edward J. Meyer, Buffalo, will make an extended visit to Europe.——Dr. Henry C. Buswell, Buffalo, leaves soon for a visit to Europe.——Dr. William C. Krauss, Buffalo, has returned from Mount Clemens.

## New York City.

**Babies' Hospital Needs Funds.**—This institution, which treated last year 610 patients of the very poorest classes, received from its patients only $680 toward its support, and now sends out an urgent appeal for financial aid.

**Office Building for Physicians.**—The first building of this kind, called the Sydenham, will be completed next month. No one except physicians of recognized standing can obtain a lease. The committee in charge is composed of Drs. Robert T. Morris, Freeman F. Ward, Daniel Lewis, George H. Fox, and William B. DeGarmo.

**Contagious Diseases.**—For the week ended March 26, 1,554 cases of measles were reported to the sanitary bureau, with 29 deaths; 494 of scarlet fever, with 28 deaths; 454 of tuberculosis, with 190 deaths; 87 of varicella, with no deaths; 21 of typhoid fever, with 9 deaths; 1 of smallpox, with no deaths, and 380 of diphtheria, with 44 deaths.

**Hospital in Good Financial Condition.**—A member of the staff of the Manhattan Eye and Ear Hospital notifies us that the institution is not in financial difficulties. He says: "We have not closed any ward for lack of funds to maintain it, or for any other reason. The institution is in a most flourishing condition, which is due to the generosity of its friends."

**Dispensary Opened.**—The new Mount Sinai Dispensary was opened March 27. There are in all 26 departments equipped with the most modern scientific appliances. This dispensary was the gift from the children of the late Mayor Leaman. The current report shows that during the past year there were treated 32,100 persons, and it is expected that in the new building at least double that number will be treated.

**Another Abortionist Trapped.**—The counsel of the county medical society, by a carefully laid trap, succeeded in securing the arrest of Dr. George H. Dolbeck, in West 28th Street, charged with attempting to perform a criminal operation.——Dr. Edward E. Conrad, whose case has been on trial this week for the same offense, has been found guilty and his sentence will be pronounced soon, which will be imprisonment for not more than two years, nor less than six months.——Dr. Blinn is now a fugitive from justice.

**Personal.**—Dr. George M. Lefferts, who recently resigned the professorship of laryngology in the College of Physicians

and Surgeons, was given a handsome loving-cup, March 28, when he delivered his farewell lecture.——Drs. Linnaeus J. Hunter and James A. Kennedy have been appointed medical officers in the fire department at salaries of $2,000.——Dr. P. Ehrlich of Frankfort-on-the-Main, Germany, participated in the proceedings of the American Association of Pathologists and Bacteriologists.——Dr. Thomas L. Stedman and wife sailed for Europe April 3.

## PENNSYLVANIA.

### Philadelphia.

**Changes in Health Bureau.**—Dr. Edward Martin, director of public health and charities, has appointed Dr. John McClintock and Maxy Pennington, Ph.D., assistant bacteriologists in the health department, to fill the positions made vacant by the resignations of Drs. John B. Stetson and T. D. Taggert.

**College of Physicians to Move.**—The College of Physicians, the oldest body of its kind in America, will abandon its time-honored quarters at Thirteenth and Locust streets and will erect a new building at Twenty-second and Ludlow streets. The new site cost $60,000. The society has $106,000 available for the new building, of which $50,000 was given by Andrew Carnegie.

**Dr. Maragliano's Paper.**—On March 28 Dr. Lawrence F. Flick, director of the Henry Phipps Institute, read Dr. Maragliano's paper before a large assembly of prominent medical men in the College of Physicians. Dr. Maragliano advocates serum therapy and vaccination for the prevention and treatment of the disease. From his researches on the question, both clinical and experimental, he is led to state: 1. That it is possible to produce a specific therapy for tuberculosis; and 2, that it is possible to immunize the animal organism against tuberculosis, as is done in other infectious diseases, and he has good reason to hope for an anti-tuberculous vaccination for man. Dr. Maragliano has shown from his investigation that it is possible in several ways to produce specific immunizing substances in man, but as yet it is impossible to say whether the resistance produced is sufficient or how long it will last. The Maragliano method of treatment is to be given a thorough test by Dr. Flick in his work at the Phipps institute.

**Health Report—Typhoid Epidemic.**—Since the first of the year, typhoid fever has prevailed to an alarming extent, and at the present time it is widely prevalent, indeed more so, in fact, than for many years. The prospects are that there will be little or no perceptible abatement in the disease until the entire city is supplied with more wholesome water. The present outbreak is widespread, covering every section of the city. The milk supply has been carefully investigated, and convincing proof has been obtained to show that it does not emanate from that source. There were 321 new cases recorded during the week ended April 2, with 24 deaths. During the preceding week there were 148 new cases and 17 deaths. The cases reported during the past week establish a new record, being 20 more than the greatest number during the epidemic of 1902; 32 new cases of smallpox were reported. This is a decrease of 2 over the previous 7 days. The death rate continues high. The total number for the week was 588, an increase of 3 over the preceding week, and an increase of 47 over the corresponding period of last year. The death rate from pneumonia also remains high, 96 persons having succumbed to the disease during the week.

**Phipps Institute Dinner.**—The anniversary dinner of the Henry Phipps Institute was given by the staff at the University Club, March 28. The delegates to the convention, which was called to consider the question of forming a national organization for the study of tuberculosis, were all invited as guests of the occasion. The feature of the evening was the presentation of a silver pitcher to Dr. Lawrence F. Flick, the director of the Henry Phipps Institute, by the members of the staff, as a token of their esteem. Mr. Henry Phipps, the founder of the institute, was present, and made the presentation in the name of the staff. Among those who spoke after dinner were Drs. Abraham Jacobi, New York City; William H. Welch, Johns Hopkins University; Vincent Y. Bowditch, Boston; John H. Pryor, Buffalo; Charles L. Minor, Asheville, N. C.; George M. Sternberg, former surgeon general of the U. S. Army; John B. Huber, New York; Leonard Pearson, state veterinarian of Pennsylvania; S. A. Knopf, New York; Samuel B. Ward, Albany; Henry B. Holton, Brattleboro, Vt.; John Henry Musser and James Tyson of the University of Pennsylvania, and James C. Wilson of Jefferson Medical College. Dr. L. F. Flick acted as toastmaster and chairman, and Dr. Maxyck P. Ravenel spoke for the staff of the institute.

## WISCONSIN.

**Half a Century in Practice.**—Dr. Francis S. McNamara celebrated his semi-centenary of practice in Milwaukee, and his eighty-fifth birthday anniversary, March 12.

**Ban on Public Gatherings.**—The prevalence of scarlet fever at Delavan has caused the local health officer to close the public schools and to prohibit public gatherings of all kinds until the epidemic subsides.

**Smallpox at Franksville.**—German immigrants are said to have brought smallpox to Franksville. There are now 12 cases in that place, and many more have been exposed. The entire town is under strict quarantine.

**Fined for Illegal Practice.**—Morris J. Kalowsky, Milwaukee, charged with having practiced medicine without a license, pleaded guilty, and was given the minimum sentence, a fine of $50 and costs. He appealed to the Municipal Court.

**Lectures on Tuberculosis.**—The Wisconsin State Tuberculosis Commission is arranging to give a series of popular lectures on tuberculosis, the object being to educate the people and to arouse public interest in the establishment of a state sanatorium for consumptives.

## GENERAL.

**Hilo Hospital Closes.**—The trustees of Hilo Hospital, Hawaii, have found it necessary, for financial reasons, to close the hospital.

**Biloxi Sanitarium Burned.**—The Biloxi Sanitarium, Biloxi, Miss., was destroyed by fire, April 5, all the patients being removed in safety.

**To Enlarge Yokohama Hospital.**—An enlargement from 25 beds to 500 has been decided on by officials of the U. S. Navy for the Yokohama Naval Hospital, and will be rushed to completion.

**Mexico Cleans Up.**—Tampico and other Mexican cities are undergoing a cleaning up at the hands of their sanitary authorities. Filth is being removed, stagnant pools drained or filled in, and systems of inspection installed.

**Ankylostomiasis Investigation in Porto Rico.**—The prevalence of ankylostomiasis in Porto Rico is to be the subject of an investigation under the charge of Captain Ashford of the Military Hospital. The government has appropriated $5,000 for the purpose.

**Porto Rico Health Affairs.**—Dr. Ricardo Hernandez, president of the Superior Board of Health of Porto Rico, has been appointed assistant director of health, charities and correction. Under the new law the Superior Board of Health becomes an advisory board to the director concerning sanitary investigations, and the causes of disease and its suppression.

**United States Society for the Study of Tuberculosis.**—For the purpose of discussing the question relating to organization for the study of tuberculosis in this country, the following met at the College of Physicians, Philadelphia, on the afternoon of March 28: From Philadelphia: Howard S. Anders, J. M. Anders, William M. Agney, L. Solis-Cohen, Solomon Solis-Cohen, W. M. L. Coplin, Frank A. Craig, Alex. H. Davisson, D. J. McCarthy, J. H. Musser, George W. Norris, Maxyck P. Ravenel, W. B. Stanton, James Tyson, T. Mellor Tyson, Joseph Walsh, W. B. Fetterman, Jr., Lawrence F. Flick, William B. Hackenburg, H. A. Hare, Charles J. Hatfield, H. R. M. Landis, Charles M. Lewis, J. M. Wilcox and J. C. Wilson. From New York City: J. Edward Stubbert, James Alex. Miller, Daniel Lewis, A. H. Doty, H. M. Biggs, A. Jacobi, Edward G. Janeway, S. A. Knopf and Alexander Lambert; also Henry D. Holton, Brattleboro, Vt.; Henry Barton Jacobs, Baltimore; Herbert M. King, Liberty, N. Y.; Charles H. Miner, Wilkesbarre, Pa.; Charles L. Minor, Asheville, N. C.; Estes Nichols, Augusta, Me.; William Osler, Baltimore; Jay Perkins, Providence; W. H. Peters, Providence; C. O. Probst, Columbus, Ohio; John H. Pryor, Ray Brook, N. Y.; DeLancey Rochester, Buffalo; Milton J. Rosenau, Washington; J. T. Rothrock, Mont Alto, Pa.; George M. Sternberg, Washington; Elwell Stockdale, White Haven, Pa.; Arthur K. Stone, Boston; J. M. Taylor, Boise, Idaho; Josephus T. Ullen, Germantown, Pa.; Samuel B. Ward, Albany, N. Y.; F. Forchheimer, Cincinnati; Albert C. Getchell, Worcester, Mass.; Henry G. Beyer, U. S. Navy; John J. Black, New Castle, Del.; Oliver A. Blumenthal, Syracuse, N. Y.; Vincent Y. Bowditch, Boston; M. J. Brooks, New Canaan, Conn.; Herbert C. Clapp and Agnes C. Victor, Boston; William H. Welch, Baltimore; Francis H. Williams, Boston; B. H. Detweiler, Williamsport, Pa.; J. W. Ellenberger, Harrisburg, Pa. Prof. William Osler of Baltimore presided, and Dr. Henry Barton Jacobs of Baltimore

acted as secretary. After a full discussion, participated in by Drs. Daniel Lewis, Minor, Flick, Knopf, Solomon Solis-Cohen, James Tyson, Stubbert, Pryor, Holton, Biggs, Rothrock, Jacobi, Janeway, Hare, Sternberg, Welch, Forchheimer, Ravenel, Rochester and Ward, Dr. Lawrence F. Flick of Philadelphia, offered the following resolution, which was seconded by Dr. Forchheimer and carried unanimously: "Resolved, that we here assembled do now organize ourselves into a United States Society for the Study of Tuberculosis." It was then moved by Dr. George M. Sternberg of Washington and seconded by Dr. Hare of Philadelphia "that the chairman appoint a committee of five to prepare a constitution and by-laws for such a society." This motion was carried unanimously. The chairman appointed Drs. Edward L. Trudeau, Herman M. Biggs, Lawrence F. Flick, William H. Welch and George M. Sternberg. It was further moved by Dr. Sternberg and carried unanimously "that the chairman and secretary of this meeting be ex-officio chairman and secretary of the committee." Dr. Ravenel then moved, and it was unanimously carried, "that it is the sense of this meeting that the committee call us together for organization at Atlantic City during the week of the session of the American Medical Association." The meeting then adjourned.

## CANADA.

**For Pure Food.**—Both an American and a Canadian firm that were selling canned tomatoes, colored with anilin, in Montreal, are being prosecuted for fraud.

**Medical Men Going Abroad.**—Drs. J. Alex. Hutchinson and George E. Armstrong of Montreal, Murray McLaren of St. John, N. B., and W. G. Anglin of Kingston, will sail from Boston for Naples, April 9, and will journey through Italy, visiting the leading hospitals, and finally going to Vienna. Dr. Anglin has just recovered from a very severe attack of septicemia.

**Military Medical Supplies.**—The medical branch of the militia department has purchased a large supply of material and equipment that will add materially to the efficiency of this service. The purchases include eighteen ambulance wagons of a new type, designed by Lieutenant-Colonel Fiset, director general of the Canadian Army Medical Service, each wagon having room in it for four patients lying down, or thirteen sitting up.

**Toronto Vital Statistics for March.**—The following shows the comparison between the births, marriages and deaths in Toronto in March in 1903 and in 1904: Births, 377 and 437; marriages, 134 and 128; deaths, 366 and 354. As in 1903 there were no deaths from smallpox in March; scarlet fever, 2; diphtheria, 17; measles, 1; typhoid, 1; tuberculosis, 30; pneumonia, 42. The number of deaths five years and under, 126; over seventy years of age, 57. Deaths from pneumonia in January numbered 58; in February, 36; March, 42. The medical health officer states that Toronto has not been so free of scarlet fever for years.

**Ontario Health Statistics for February.**—During February only 680 divisions made returns to the Ontario Board of Health, and these show that the deaths were 2,332 in a population of 1,024,976, or at the rate of 14.4 per thousand. For the same month last year, a population of 1,041,632 reported 2,176 deaths. During February there were 41 cases of smallpox in the province in 11 places, with 1 death; 251 cases of scarlet fever in 62 places, with 13 deaths; 289 cases of diphtheria in 55 places, with 42 deaths. Measles was reported in 41 municipalities, with 1 death. Whooping cough occurred in 9 places, typhoid fever in 23, and consumption in 106.

**No Adulteration Found in Canadian Liquors.**—The department of inland revenue has issued a bulletin on distilled liquors. The samples analyzed consisted of rye whiskey, 91; white, 30; Scotch, 24; Irish, 2; gin, 27; rum, 12; brandy, 30; total, 216. Mr. McGill, who made the analysis, states that no deleterious substances have been found in these samples. In accordance with special instructions, he made an examination for alkaloids in all whiskey samples having less than 75 per cent. proof strength. A negative result was obtained in every case. He found some of the samples had been watered, particularly gin, which showed a noteworthy falling off in strength.

**Ontario Physicians Fail to Report Typhoid Fever Cases.**—Dr. Hodgetts, the secretary of the Ontario Board of Health, is endeavoring to enforce the law requiring all cases of infectious and contagious diseases to be reported. He finds that in 1902 there were announced to the department 1,542 cases of typhoid fever throughout the province, while the hospital statistics show 2,007 cases. In 1903 returns from the 700 divisions showed 1,012 cases, while in the hospitals there were 1,918 cases. He states that during the past few months several outbreaks of typhoid fever have been covered up by medical men failing to report, and that he may have to resort to prosecutions in order to wake up the physicians and to protect the public.

## FOREIGN.

**Plague in Peru.**—Lima, Peru, is suffering from the plague. There were 32 cases in the week ended March 26 and 4 deaths March 30.

**Ecuador Fights Mosquitoes.**—Ecuador is carrying on an active campaign against yellow fever and malaria. Mosquitoes are being destroyed and circulars of information are being distributed, giving the regulations of the U. S. Public Health and Marine-Hospital Service.

**More Plague in India.**—The plague is said to be on the increase in India. For the week ended March 19 there were 40,527 deaths. The weekly rate in the Punjab and in the northwest provinces is 10,000 each, in the Bombay presidency the deaths number 8,500, and in Bengal 5,000.

**Typhoid Fever at Paris.**—There have been a number of cases of typhoid fever at Paris, the maximum in one week reaching 147. The proportion has been about one case per 10,000 inhabitants. One ward (Ménilmontant), although inhabited by the very poor, has always been remarkably exempt from typhoid fever, and this immunity was retained through the present epidemic.

**Supervision of Infant Foods Needed in England.**—At an inquest on the death of a child from convulsions, said to be due to the use of improper proprietary foods, held at the Wandsworth coroner's court, England, April 1, attention was called to the English laws which allow the sale, without supervision or inspection, of patent foods for children. The coroner said that such foods, sold by enticing advertisements, were responsible for the deaths of many children, and made the same statement about patent medicines. He urged that the government take up the matter.

**A Mounted Red Cross Battalion.**—A wealthy Russian has organized a mounted battalion, with 50 horses, to carry the wounded from the battlefield and give them medical aid. The horses carry folding litters, tents, etc. The officers of the company consist of 3 physicians, 4 assistants, 50 mounted attendants and 8 servants. Dr. W. Halle of Riga has charge of the medical department and the founder of the company, Mr. Rodzjanko, will lead it in person, besides paying all the expenses of its maintenance. The instruments were purchased in Berlin and Stockholm.

**Vaccination Against Syphilis.**—Metchnikoff inoculated a chimpanzee with virus from a baboon. No secondary manifestations have appeared during the ninety days since. Further inoculation with human virus has proved equally negative. There is a possibility that the first inoculation from the baboon conferred immunity to the human virus. He is awaiting the arrival of a consignment of chimpanzees to repeat the experiments on a large scale. It will be remembered that Roux and Metchnikoff have devoted the large prizes bestowed on them last year to this research on anthropoid apes.

**The Fourth International Home Relief Congress** will be held at Edinburgh, June 7-10, with the object of discussing the ways in which aid can best be given the distressed poor in their own homes. The medical bearing of the following portion of the work planned makes it worth noting:

SECTION IV.—SICK ADULTS.

1. The Organization of the Home Treatment of Pulmonary Tuberculosis.
2. The Relation Between Hospital and Home Relief of Sick Poor.
3. The Best Scheme of Home Attendance on Puerperal Women in Larger Centers.

SECTION V.—INSANE AND EPILEPTICS.

1. The Best Method of Administering the System of Family Care of the Insane, and the Best System of Supervision.
2. After Care of Friendless Patients Discharged from Asylums.
3. The Supervision and Home Care of Children and Young Adults Who Are Mentally Defective.
4. Epileptic Colonies.

Correspondence may be addressed to Edward T. Devine, 105 East Twenty-second Street, New York City.

## LONDON LETTER.

### Outbreak of Plague in Johannesburg.

An outbreak of plague in Johannesburg has caused considerable anxiety in England, as the strongly criticised intention of the government to import Chinese to work the mines has just been promulgated. Ten fresh cases are reported to-day,

and the mortality now amounts to 65 whites and 60 colored persons. The coolies are being rapidly removed to a new location outside the town. As the reports in THE JOURNAL show, plague has existed in South Africa for some years, though only in Port Elizabeth has it assumed considerable proportions. According to the last report no case of plague exists in Cape Colony, but rats are still reported as infected at Port Elizabeth and East London. In 1903 there were 135 deaths from plague in Cape Colony. Of these only 18 occurred in the last six months, so that the disease was declining. How the infection was carried to Johannesburg is not known. As adjacent districts are not infected it is thought to have been carried by rats in grain or other merchandise sent by rail. The disease is chiefly of the pneumonic variety.

## Correspondence.

### Cause of Increase in Pneumonia.

INDIANAPOLIS, March 28, 1904.

*To the Editor:*—A study of the Indiana mortality statistics and the morbidity and weather reports furnish data which seem to give some light on the cause of the recent marked increase in the pneumonia death rate.

Comparing the periods made up of November and December, 1900, and January and February, 1901, as the first period, and November and December, 1903, and January and February, 1904, as the second period I find that in the first there were 1,720 deaths, the weather was not severe, measles, influenza and "colds" were very prevalent and natural gas with no smoke was the almost universal fuel. The weather being mild, and the use of soft coal, as suggested by Dr. Lindsley of Connecticut, were not the cause of the increase in pneumonia which appeared in the period named. In the second period there were 1,784 pneumonia deaths, only 64 more than in the first, and the weather was very severe, soft coal was the universal fuel, and measles, influenza and colds very prevalent. It appears, therefore, that in the two periods separated by three years, they were closely alike in number of pneumonia deaths, also in the fact of prevalence of measles, influenza and "colds," but unlike in regard to weather and soft-coal smoke. Further, it appears from an examination of the death certificates of the two named periods, that an unusual proportion of pneumonia deaths among children occurred. For instance, in February, 1904, of the 711 pneumonia deaths 268 or 38.2 per cent., were under five years of age, and in February, 1901, there were 608 pneumonia deaths, with 237, or 39 per cent., under five years. Such a coincidence under the circumstances is certainly notable. In the two intervening Februarys, namely, of 1902 and 1903, we note fewer pneumonia deaths with blustering cold weather, plenty of coal smoke, but not a remarkable presence of measles, influenza and "colds" and a lower pneumonia death rate among the children. So far as Indiana is concerned it seems we are constrained to conclude that the increase in pneumonia attended the greater susceptibility caused by measles, influenza and "colds." J. N. HURTY,
Secy. Indiana State Board of Health.

### Priority in Methods of Closure of Abdominal Wounds.

PHILADELPHIA, April 1, 1904.

*To the Editor:*—In THE JOURNAL of the American Medical Association, March 12, p. 737, is an abstract of an article entitled "Abdominal Aponeuroses." The author of the article Dr. Winslow, seems to be unaware of the fact that his proposals of new methods and new principles in the closure of abdominal wounds are by no means novel. They have been in daily use in my hands for the last seven years, and intermittently, since 1894. The questions at issue were published by me in the *American Journal of Obstetrics*, April, 1897, the paper entitled "A New Method of Suturing the Abdominal Wall in Celiotomy," being read before the section of gynecology of the College of Physicians of Philadelphia, Jan. 21, 1897. The principles discussed by Dr. Winslow were further elaborated by me in a paper entitled "Remarks on the Influence of Technic on the Results of Closure of Wounds of the Abdominal Wall," read before the Obstetrical Society of Boston, Nov. 21, 1898, and published in the *Boston Medical and Surgical Journal*, March 8, 1900. These principles have been discussed by me on numerous occasions since these dates. CHARLES P. NOBLE.

## Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

### PRIORITY AS TO TURTLE SERUM.

CHARLESTON, Mo., April 2, 1904.

*To the Editor:*—In abstract 96, on page 136, of THE JOURNAL, Jan. 9, 1904, I see what I term an infringement on my rights as a discoverer. If you will consult THE JOURNAL you will see that I wrote the original article on "Turtle Serum," and among other things said that this serum was "specific" for all maladies, and just why a Dutchman and a foreigner should try to usurp my prerogative I am unable to see. The *Deutsche medicinische Wochenschrift*, of Berlin and Leipsic, is the journal from which you abstract this effort on the part of a foreigner to supplant a S. E. Missourian—a swamper. Now I feel that you have too much respect for Missouri and for one of its humble citizens to allow this foreigner (Dr. Friedmann) to undermine me in any such way. I informed your readers where they could get this "turtle serum," told them plainly of Dr. Rushe's phenomenal success, etc., and now here, at this late date, to see such effrontery as is displayed by Dr. Friedmann makes me tired. Please come to my relief and tell your readers that when it comes to "turtle serum" I am "cock of the walk" and can whip any man that dare trespass on my rights. W. P. HOWLE, M.D.

ANSWER.—Dr. Howle's claim of priority is based on his publication in THE JOURNAL, Nov. 1, 1902, p. 1124.

### INTERFERENCE—GUARANTEEING CURE—BETTING.

April 2, 1904.

*To the Editor:*—A patient declined my services because I would not guarantee to cure him, and went at once to the office of a physician who professes great friendship for me and who is a member of the various societies. This physician told the patient he would not guarantee a cure, but would "bet him" (and did bet him, committing the agreement to paper and putting up the money) that he could cure him. Has the brother erred? He was aware of the patient's conduct with me. —— H.

ANSWER.—It is almost impossible to believe that a physician would thus gamble on the prospect of curing a patient. Our correspondent's statement is an *ex parte* one, and we should like to hear the other side before commenting to any extent. We may be allowed the general remark that either betting or guaranteeing a cure is incompatible with respectability and honor. As to the point whether the second physician had a right to take the case, this depends on whether the patient discharged our correspondent or not. If he did, any other physician could take the case.

### REQUIREMENTS FOR PRACTICE IN MEXICO.

SAULT STE. MARIE, MICH., March 25, 1904.

*To the Editor:*—Will you tell me through THE JOURNAL the requirements of the laws that govern the practice of medicine in old Mexico? M. D. L.

ANSWER.—We believe that the practice of medicine in Mexico is free, but to have any legal standing and to be able to sign death certificates, to give testimony or to hold medical positions, one will have to pass an examination varying, we understand, in the different states. In the City of Mexico it is said to be rather severe in the Spanish language. There would probably be some inconveniences in general practice without such a license in certain states of the republic. In others, a license may be less a requisite.

### REQUIREMENTS FOR PRACTICE IN CANADA.

MONROE CITY, Mo., April 1, 1904.

*To the Editor:*—Will you please inform me of the requirements to practice medicine in the northwest territory of Canada? If examination is required state date and place and name of secretary. B. S. LINCOLN.

ANSWER.—Unless one has a British or Canadian qualification he must possess a diploma recognized by the board from an institution requiring a four-year course and must pass an examination. We have not seen the list of recognized institutions. The registrar is J. D. Lafferty, M.D., Calgary, N.W.T., Canada.

### RECIPROCITY IN NEW YORK, WISCONSIN AND MINNESOTA.

RUN: New York does not reciprocate with any other state at the present time.

COLORADO: Minnesota has no provision for reciprocity in its medical practice act. Wisconsin reciprocates with Ohio, but not with Colorado. Since these arrangements are dependent on the by-laws of the board they are liable to change.

### POSTMORTEM ON A DEAD BODY.

A reader calls our attention to the following definition in Dorland's American Pocket 'Medical Dictionary: "Autopsy. Postmortem examination of a dead body." He asks us if the definition is correct. Yes, very much so.

### FINSEN LIGHT LITERATURE.

DR. A. W. HAMMER, Philadelphia: An article on the Finsen light appeared in THE JOURNAL, April 12, 1902. Longmans, Green & Co., New York City, publish a book on "Finsen Phototherapy."

## Marriages.

W. ED. GRANT, M.D., to Mrs. Daisy D. Walker, both of Louisville, March 24.

CARLTON W. CRAGG, M.D., to Miss Aline Williams, both of Cincinnati, March 24.

REGINALD STONESTREET, M.D., Paragon Mills, Tenn., to Miss Carrie Savage of Nashville, March 23.

MARK D. ETHERIDGE, M.D., to Miss Mary Elizabeth Bostick, both of Sandersville, Miss., March 24.

GREER BAUGHMAN, M.D., Richmond, Va., to Miss Wilhelmina Agnes Reeve of Washington, D. C., April 6.

JAMES EDWARD GILL, M.D., U. S. Navy, to Miss Lucy Hamilton Armes of Birmingham, Ala., March 24.

BERNARD SINGLETON GOSTIN, M.D., Macon, Ga., to Miss Katharine Elizabeth Dawson of New York City, April 4.

## Deaths.

**Louis A. Kengla, M.D.** University of Georgetown, Washington, D. C., 1886, a member of the American Medical Association and editor of the *Occidental Medical Times*, died at his home in San Francisco, March 26. The *Sacramento Bee*, in an editorial comment on his death, pays the following tribute:

> The fearless and broad-minded course he pursued with regard to bubonic plague in San Francisco commended him to the esteem of the profession and the gratitude of the public. From the first he stood for the policy of telling the truth, and denounced the miserable attempts at concealment and falsification which for a time threatened to result in a general eastern quarantine against this state. In adhering to this sound and honest course he suffered in business and was exposed to much annoyance, but he never faltered in his uncompromising, unflinching devotion to right and duty. He had the satisfaction of living to see vindication of the truth and official recognition by the state health authorities of the existence of the disease whose presence has so long been falsely and foolishly denied by the press of the city.

**John Metcalf Polk, M.D.** Cornell University Medical College, New York, 1899, died from pneumonia at his home in New York City, March 29, after an illness of ten days, aged 28. Dr. Polk was the son of Dr. William M. Polk, and graduated second in his class. He served as interne in Bellevue Hospital, and was afterward made adjunct assistant physician to that institution. During the past winter he had been conducting experimental research on the hemolytic action of the blood in infectious diseases. This work, which promises to be of value, was practically completed at the time of his death.

**Abram B. Arnold, M.D.** Washington University School of Medicine, Baltimore, 1848; president of the Baltimore Medical Association, 1871-1872; president of the Medical and Chirurgical Faculty of Maryland, 1877-1878; professor of practice of medicine in Washington University, 1872-1877; professor of nervous diseases, College of Physicians and Surgeons, 1877-1880, and afterward professor emeritus; a practitioner of repute, and a linguist of note, died at his home in San Francisco, March 28, aged 84. From 1848 to 1902 he practiced in Baltimore.

**Charles C. Carter, M.D.** Bellevue Hospital Medical College, New York, 1876, assistant surgeon general of Illinois; a member of the American Medical Association, Association of Military Surgeons of the United States, Illinois Association of Military Surgeons, Illinois State Medical Society; Iowa and Illinois Central District Medical Society and Rock Island County Medical Society; a prominent and beloved physician of Rock Island, died at his home in that city, April 2, from pneumonia, after an illness of six days, aged 51.

**Israel Parsons, M.D.** College of Physicians and Surgeons, New York, 1843, a member of the New York State and Onondaga County medical societies, and the Syracuse Academy of Medicine, died at his home in Marcellus, N. Y., March 20, after an illness of five days, aged 82. In 1899 the Onondaga County Medical Society gave a banquet in honor of Dr. Parsons' semicentenary in medicine.

**Stephen Paul Truex, M.D.** Long Island College Hospital, Brooklyn, 1891, of Brooklyn, instructor in general surgery and surgical anatomy in the Post-Graduate Medical School and Hospital, member of the Kings County Medical Society, and gynecologist to Bushwick Central Hospital, Brooklyn, died suddenly while performing an operation in that institution from acute dilatation of the heart, March 31, aged 48.

**Arthur R. Simmons, M.D.** College of Physicians and Surgeons, New York, 1875, Utica, N. Y., died at his home in that city, March 27, from heart disease. The Utica Medical Library Association held a memorial meeting, March 29, at which tributes were paid to the memory of Dr. Simmons, and resolutions were adopted by the medical staff of St. Luke's Hospital.

**Elijah P. Neal, M.D.** Starling Medical College, Columbus, 1860, expert in the office of the city attorney, Chicago, coroner's physician of Cook County from 1896 to 1900, assistant professor of physiology at Rush Medical College, died from tuberculosis, March 29, at Phoenix, Ariz., after an illness of seven years, aged 39.

**Washington H. Baker, M.D.** University of Pennsylvania, Philadelphia, 1875, for several years assistant to Professor Penrose in the University Hospital; visiting physician to St. Joseph's Hospital, and a surgeon in the Second Infantry, N. G. Pa., died March 31, at his home in Philadelphia, from apoplexy, aged 52.

**Percy L. Jermane, M.D.** Jefferson Medical College, Philadelphia, 1892, of Holton, Kan., a member of the American Medical Association, and one of the foremost surgeons of Northeastern Kansas, died at Stormont Hospital, Topeka, March 22, from general peritonitis following an operation for appendicitis, aged 36.

**Harry J. Chapman, M.D.** University of Pennsylvania, Philadelphia, 1895, of San Antonio, Texas, formerly physician to Winyah Sanitarium, Asheville, N. C., a member of the American Medical Association, and of the Texas Medical Association, was shot and instantly killed, while driving, March 25, aged 37.

**John Paul Dombrowski, M.D.** University of Berlin, Germany, 1880, a member of the American Medical Association, one of the most prominent specialists on diseases of the eye in central Illinois, died at his home in Peoria, March 28, from pneumonia, after an illness of ten days, aged 47.

**David Mackay, M.D.** University of Glasgow, Scotland, 1855, surgeon in the Crimean and Civil wars; later city physician of New Orleans, and for six years surgeon general of the Grand Army of the Republic, died at his home in Dallas, Texas, March 23, aged 71.

**George H. Butler, M.D.** Bellevue Hospital Medical College, New York, 1860, a member of the New York County Medical Society and New York Academy of Medicine, died at his home in New York City, from throat disease, March 28, aged 61.

**Albert Stanley Dolan, M.D.** University of Michigan Homeopathic Medical College, Ann Arbor, 1882, formerly assistant at the Southern California Hospital for the Insane, died at Riverside, Cal., March 21, from heart disease.

**Charles E. Wettse, M.D.** New York Homeopathic Medical College and Hospital, 1902, Syracuse, N. Y., died at the Hahnemann Hospital, New York, March 28, from cerebral hemorrhage, after an illness of four weeks, aged 41.

**John G. Brooks, M.D.** Jefferson Medical College, Philadelphia, 1851, ex-mayor of Belfast, Maine, state senator in 1873, and representative in 1880, died at his home in Belfast, March 22, after a long illness, aged 83.

**Lawrence L. Glover, M.D.** Jefferson Medical College, Philadelphia, 1882, ensign and assistant surgeon in the Naval Reserve of New Jersey, died at his home in Haddonfield, N. J., March 21, from pneumonia, aged 37.

**Alfred Duperier, M.D.** Tulane University, New Orleans, 1847, who rendered effective service in the yellow fever epidemics of

1863 and 1867 in southwestern Louisiana, died at his home in New Iberia, La., aged 77.

Harry S. Dinsler, M.D. Medico-Chirurgical College, Philadelphia, 1903, of Schoenack, Pa., died from acute nephritis at the Medico-Chirurgical Hospital, Philadelphia, at which he was resident physician, March 20, after an illness of one week, aged 22.

J. W. Crowley, M.D. St. Louis Medical College, 1867, chief surgeon of the Thirteenth Missouri Cavalry in the Civil War, died suddenly in Cairo, Egypt, March 15, after an extended period of ill health.

Morris Silk, M.D. College of Physicians and Surgeons, New York, 1902, resident physician at Hart's Island, died at his home in New York City, March 28, after an illness of eight weeks.

John R. Jones, M.D. University of Pennsylvania, Philadelphia, 1858, surgeon in the Confederate service during the Civil War, died at his home in Emporia, Va., March 25, aged 69.

John A. Anthony, M.D. Rush Medical College, Chicago, 1867, for 15 years at Chenoa, Ill., died at a hospital in Boise, Idaho, where he had recently located, from pneumonia, March 26.

Clinton Munson, M.D. Hahnemann Medical College, Chicago, 1872, of Tacoma, Wash., died from septicemia after a long illness in a sanatorium in San Francisco, March 20.

John T. Steele, M.D. University of Pennsylvania, Philadelphia, 1879, who retired from practice several years ago, died at his home in Pulaski, Tenn., March 10, aged 76.

Emil A. Haag, M.D. Kentucky School of Medicine, Louisville, 1902, of Indianapolis, died suddenly from heart disease at the home of his mother in that city, April 3, aged 41.

Joseph W. Sharp, M.D. University of Pennsylvania, Philadelphia, 1850, died from asthma after a long illness at his home in Dayton, Pa., March 2, aged 69.

Milo Olcott Carter, M.D. Dartmouth Medical College, Hanover, N. H., 1863, surgeon during the Civil War, died recently at his home in Lowell, Mass., aged 64.

John H. Hunter, M.D. Atlanta (Ga.) Medical College, 1888, died at his home in Powder Springs, Ga., March 23, from consumption, after a long illness.

W. F. Dehrmann, M.D., of San Francisco, died at his home in Santa Barbara, Cal., March 26, from pneumonia, after an illness of one week, aged 35.

Emil Schottenfels, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1874, died at his home in Chicago, March 31, from pneumonia, aged 74.

Mary Denison Moss, M.D. Boston University School of Medicine, 1875, died at her home in Providence, R. I., from heart disease, March 25, aged 64.

Elmer E. Prescott, M.D. Rush Medical College, 1893, died at his office in Chicago, from the effects of atropin, self-administered, March 30, aged 41.

Austin D. Smith, M.D. Geneva (N. Y.) Medical College, 1869, died suddenly at his home in East Pembroke, N. Y., March 25, from apoplexy, aged 73.

Morris Bailey, M.D. Penn Medical University, Philadelphia, 1865, died at his home in Titusville, Pa., March 17, after a long illness, aged 85.

Birney R. Gould, M.D. Rush Medical College, Chicago, 1896, died from heart disease at his home in Chicago, March 29, after a short illness.

Solomon P. Allen, M.D. Geneva (N. Y.) Medical College, 1867, died at his home in Lestershire, N. Y., March 23, after a long illness, aged 59.

Frederick H. Austin, M.D. Indiana Eclectic Medical College, Indianapolis, 1885, was found dead in his office in Jamestown, Ind., March 26.

Mark J. Bixby, M.D. College of Physicians and Surgeons, Boston, died recently at his home in West Fairlee, Vt., from paralysis.

W. W. Nash, M.D. Kentucky School of Medicine, Louisville, 1882, died from pneumonia at his home in Pheba, Miss., March 28.

William B. Berland, M.D. McGill University, Montreal, 1872, died at his home in Montreal, March 19, from pneumonia, aged 80.

Edward P. Woodward, M.D. Yale Medical School, New Haven, 1860, retired, died at his home in Bristol, Conn., March 19, aged 67.

John Gilwee, M.D. St. Louis Medical College, 1876, died suddenly at his office in St. Louis, March 28, from heart disease, aged 62.

Winfield R. Robison, M.D. Medical College of Georgia, Augusta, 1875, died recently at his home in Milledgeville, Ga.

Louis D. Cyr, M.D., the oldest physician of the Upper Peninsula, died at his home in Negaunee, Mich., March 27, aged 68.

Edwin B. Mack, M.D. University of Vermont, Burlington, 1837, died recently at his home in Woodstock, Vt., aged 92.

Giovanni Demaglianis, M.D. University of Parma, Italy, 1899, of Coal City, Ill., died recently at South Wilmington, Ill.

Harry J. Combel, M.D. Tulane University, New Orleans, 1897, died at his home in New Orleans, March 24, aged 28.

J. J. Baxter, M.D. Medical College of Georgia, Augusta, 1883, died recently at his home in Mount Willing, S. C.

C. H. Roberts, M.D., died suddenly at his residence in Wolfe City, Texas, March 26, from heart disease.

Nathaniel T. Clarke, M.D., died at his home in North Syracuse, N. Y., February 25, aged 76.

Isaac Sides, M.D., retired, died at his home in Colon, Mich., March 22, aged 84.

## Book Notice.

THE COMPLETE ANAS OF THOMAS JEFFERSON. Edited by Franklin B. Sawvel, Ph.D. Cloth. Pp. 283. Price, $1.50. New York: The Round Table Press. 1903.

This is a compilation of notes jotted down by Thomas Jefferson during the important period of 1791 to 1809. The anas are items of "passing transactions," private notes, opinions on current topics—just such items as one would record in a well-kept diary, but instead of being written in a book, they were put "on loose scraps of paper taken out of my pocket in the moment, and laid down to be copied fair at leisure, which, however, they hardly ever were." They are interesting and instructive as showing the personal views of one who helped to mold the opinion of men who founded our government and who framed the constitution under which we live. A brief biographical sketch of Jefferson is given, and his first inaugural address appears as an appendix. The editor could have made the work much more instructive had he inserted explanatory footnotes occasionally; as it is, many of the "notes" are unintelligible since the reader is in the dark regarding the subject matter. Another serious fault, and it is inexcusable, is that there is no index. The book is well gotten up, is well printed and bound, and makes a handsome appearance.

## Association News.

### Atlantic City Hotels.

For a list of the hotels at Atlantic City and their prices, see THE JOURNAL, April 2, page 912.

### Other Meetings at Atlantic City.—The Gastro-Enterological Association.

In addition to the full section programs of the American Medical Association at the annual session at Atlantic City, June 7 to 10, additional attraction for the visitor is found in the other societies that are to meet there at about the same date. The American Gastro-Enterological Association is one of these; it will meet June 6 and 7, and the chief subject on the preliminary program is "Gastric Ulcer." There will be a symposium in some fifteen or more subdivisions by as many well-qualified men.

### New Members.

List of new members for the month of March, 1904:

ALABAMA.

Lindsey, E. C., Florence.
Maxwell, C. E., Kellyton.
Pugh, S. R., Ironaton.
Odem, J. N., America.
Perry, H. G., Greensboro.
Henderson, S. C., Brewton.

ARKANSAS.

Wootton, W. T., Hot Springs.
Jennings, Chas., Little Rock.
Jones, Rev. D., Russellville.
Latimer, Newton J., Corning.
Hightower, Wm. M., Grapevine.

CALIFORNIA.

King, Jos. M., Los Angeles.
Fox, W. H., Los Angeles.
Lang, Paul, Oakland.
Dell, Lillian A., Oakland.
Perry, Alf. W., San Francisco.
Steitzner, Emil, San Francisco.
Buckley, V. P., San Francisco.
Hill, Harold P., San Francisco.

Quinan, Clarence, San Francisco.
Woolsey, C. H., San Francisco.
Lawry, Olin J., Redding.
Snow, Wm. F., Standford Univ.
Wickman, W. J., San Rafael.
Delamere, Henry S., Ferndale.

COLORADO.

Moore, T. B., Canon City.
Keller, Wm. N., Salida.
Edwards, J. L., Florence.

CONNECTICUT.

Down, Edwin A., Hartford.
Winne, Wm. N., New Haven.
Bartlett, Chas. J., New Haven.

DISTRICT OF COLUMBIA.

Hunt, Reid, Washington.
Gill, Wm. T., Washington.

FLORIDA.

Bartlett, Chas. W., Tampa.
Caldwell, Frank H., Tampa.
Newson, W. V., Ocala.
Smith, Dan M., Ocala.
Peak, Leon A., Melbourne.
Waggoner, Richard, Warrington.
Glover, Geo. B., Monticello.
Welch, Geo. E., Palatka.
Howard, N. de N., Sanford.
Harris, R. L., Orlando.
Kennedy, S. R. L., Pensacola.

GEORGIA.

Van Dyke, Arthur H., Atlanta.
Crawford, J. M., Atlanta.
Johns, J. H., Atlanta.
Hoke, Michael, Atlanta.
Bradley, J. H., Macon.
Weichselbaum, J., Savannah.

IDAHO.

Stoneburner, J. N., Leland.

ILLINOIS.

Culloran, J. Edgar, Chicago.
Ladore, Neville M., Chicago.
Guagliata, Vincent, Chicago.
McGowan, M. J., Chicago.
Wyneoop, C. I., Chicago.
Brown, F. L., Chicago.
Harvey, And. M., Chicago.
Haag, Frances J., Edwardsville.
Davis, Homer W., Alton.
Wilson, Harry E., Sandoval.
Friend, Wm., Sumner.

INDIANA.

Fry, Berna C., Indianapolis.
Scott, Euclas K., Hartford City.
Button, C. E., Crown Point.
Kurtz, F. B., Princeton.

IOWA.

Walker, Harry T., Dubuque.
Hibbs, O. B., Mitchellville.
Hill, Wm. F., Beaman.
Hansen, Andreas S., Waterloo.
Pease, C. I., Linn Grove.
Bishop, Carl S., Glanglow.
Foley, Fred. C., Newell.
Harvey, Leonard J., Alta.
Reid, Duncan, New Hartford.
Stout, A. O., Parkersburg.
Hansen, A. W., Hanlontown.

KANSAS.

Snider, S. J., Courtland.
Gaines, F. M., Solomon.

KENTUCKY.

McKinney, Wm. Thos., Louisville.
Pfinget, Adolph O., Louisville.
Quinby, S. C., Louisville.
Duncan, Ellis, Louisville.
Smoch, E. W., Louisville.
Overall, John B., Dacon.
Albright, G. H., Barbourville.
Young, C. H. O., Flippen.
Yeaman, Malcolm H., Lakeland.
Hart, Robt. S., Pisgah.
McBee, E. S., Jonesville.
Bugg, T. D., Bardwell.
Owens, Jas. R., Arlington.
Bass, J. Milton, Cynthiana.
Blair, Amplias O., Earlington.
Barkley, C. M., Leesburg.
Stith, Sam'l H., Ekron.
Tyldesley, Harry, Central City.

LOUISIANA.

Dillon, J. R. M., New Orleans.
Le Blanc, Henry A., Paincourtville.
Lynch, Robt. C., Natchitoches.

MAINE.

McDonough, Edw. J., Portland.
Chellis, E. O., Portland.

MARYLAND.

Spruill, St. Clair, Baltimore.
Gibbons, Wm. H., Crosm.

MASSACHUSETTS.

Coggeshall, F., Boston.
Germain, Harry E., Boston.
Jack, Edwin Everett, Boston.
Holt, Frank Hammett, Boston.
Taylor, Fred't W., Cambridge.
Whorisksy, John J., Cambridge.
Boyer, Jos. N., Springfield.
Benner, Richard S., Springfield.
Bayliss, Andrew, Worcester.
Tripp, G. Alston, Worcester.
Farnham, J. M., Worcester.
Whiting, Geo. W. W., Somerville.
Hodgdon, Ralph F., Somerville.
Adams, Chas. B., Pittsfield.
Cilley, Dan'l P., Westboro.
Woodworth, D. S., Fitchburg.
Merritt, L. A., Bridgewater.
O'Brien, Chas. Thos., Woburn.
Blood, Robt. A., Charlestown.
Brown, Geo. A., Barre.
McCabe, John J., Holyoke.
Genereux, J. O., Webster.
De Land, Chas. A., Warren.
Handy, Harry T., Hyannis.
Ayer, Thos. H., Westboro.
Curtis, Henry S., Somerville.
Bliss, Jesse L., Holyoke.
Cooley, Abbott L., Chicopee.

MICHIGAN.

Loree, Ira Dean, Ann Arbor.
Getchell, A. T., Mt. Pleasant.
Church, Starr K., Marshall.
Allen, R. O., Remus.

MINNESOTA.

Staples, H. L., Minneapolis.
Johnson, Carl E., Clinton.
Johnson, A. Einar, Madison.
Nelson, N. Amherst, Dawson.

MISSISSIPPI.

Goodwin, F. G., Prentiss.
Seale, Robt. A., Holly Springs.
Ethridge, Mark D., Sandersville.

MISSOURI.

Heddens, Jas. Weir, St. Joseph.
Winale, J. F., Kansas City.
Eibrecht, O. H., St. Louis.
Jennings, John E., St. Louis.
Clark, John W., Cartersville.
Norwine, J. J., Poplar Bluff.
Seybold, Ira W., Poplar Bluff.
Kinchelos, M. B., Joplin.
Tatum, Harry E., Brunswick.
Chastain, C. H., Farley.
Reagan, Chas. W., Macon.
Williamson, C. W., Poplar Bluff.
Foster, J. P., Lacrosse.
Detweiler, Andrew J., Columbia.

MONTANA.

Larson, Carl L., Butte.

NEBRASKA.

Lindquist, A. B., Omaha.
Hilmrod, Marg. C., Butte.
Cook, C. C., Oreola.
Koetter, Max, Oakdale.
Weirick, Geo. A., Hastings.
George, Wm. A., College View.

NEW HAMPSHIRE.

Smith, A. Noel, Dover.

NEW JERSEY.

Finn, Jos. F., Jersey City.
Jacobson, F. C., Newark.
Bianchi, Angelo R., Newark.
Beacon, J. J., Carteret.
Bradner, Fred't S., Englewood.
Hoagland, L. B., Oxford.
Saulsberry, C. E., Mays Landing.

NEW YORK.

Busch, Fred'k C., Buffalo.
Jones, Edw. W., Buffalo.
Sweeney, J. A. V., New York City.
Holt, L. Emmett, New York City.
Murphy, R. F., New York City.
Stedman, Wm. G., Rochester.
Goddard F. H., Rochester.
Hall, Dudley L., Glen Falls.
Nelson, John W., Jamestown.
Hutton, Edw. H., Corning.
Knowles, Chas. P., Olean.

NORTH CAROLINA.

Zimmerman, Chas. St. V., Asheville.
Ledbetter, Jas. McQ., Rockingham.
Edwards, Geo. P., Sylva.

OHIO.

Carothers, Robt., Cincinnati.
Hannum, E. S., Cleveland.
Season, Edwin H., Cleveland.
Rauschkell, John, Columbus.
Doherty, E. W., Toledo.
Gibbons, Jas. T., Lynchburg.
Murrell, U. G., New Burlington.
Zeller, H. Rush, St. Paris.
Kendall, B. J., Tippecanoe City.
McAuliffe, D. L., Botkins.
Barr, Wm. E., London.

OKLAHOMA.

Barnes, John Henry, Jet.

OREGON.

Barnes, E. W., North Powder.

PENNSYLVANIA.

Friesell, H. Edmund, Pittsburg.
Buckley, Albert C., Philadelphia.
Pickett, Wm., Philadelphia.
Graf, Edmund L., Philadelphia.
Bardsley, G. Ashton, Philadelphia.
Pancoast, H. K., Philadelphia.
Weisenburg, T. H., Philadelphia.
Muirenan, John P., Philadelphia.
Eckfeldt, J. C., Philadelphia.
Reyer, B. Franklin, Philadelphia.
Rowman, Frank S., Philadelphia.
Colgan, Jas. F. E., Philadelphia.
Hirsh, A. R., Philadelphia.
Stein, Geo. W., Norristown.
Miller, John Elmore, Harrisburg.
Cashman, Thos. F., Washington.
Davis, A. F., St. Mary's.
Mantin, Charlotte E., Wellsboro.
Booth, Alex. N., Bentleysville.
Schmehl, C. W., Warren.
McGirk, Chas. E., Phillipsburg.

RHODE ISLAND.

Hawkins, J. F., Providence.

SOUTH DAKOTA.

Kenney, H. T., Bruce.
Hill, Leslie G., Watertown.
Troon, F., Chamberlain.
Van Dalsem, Friede, Huron.

TENNESSEE.

Wright, Galen R., La Follette.
Shepherd, Irwin J., La Follette.

TEXAS.

Irvin, Edgar H., El Paso.
Kelley, J. A., Ft. Worth.
Terrill, Jas. J., Galveston.
Cox, Robt. L., Houston.
Skipper, Robt. W., Lovelady.
Hall, Robt. Lee, Rimo.
Hall, Chas. Edw., Lindale.
Simons, Jas. Elmo, Bay City.
Harrell, Thos H., Hutto.
Crook, W. A., Lindale.
Bass, Virgil M., Waxahachie.
Harris, Robt. Lee, Rio Vitta.
Dyer, John F., Chicola.
Meyer, Joseph, Paris.
Hines, B. F., Tyler.
Batte, Edw. Lee, San Angelo.
Rowland, Oliver Jas., Sealy.
Waters, Henry W., Montgomary.
Weinfield, L. M., Cestohawa.

UTAH.

Joyce, Robt. S., Ogden.

VERMONT.

Buffum, John H., Wallingford.

VIRGINIA.

Cook, Henry W., Richmond.
West, Thos. P., Bedford City.

WASHINGTON.

Clark, Leslie W., Seattle.
McCormack, P. D., Spokane.
Carr, F. I., Montlanzo.
Durrent, Jas. A., Snohomish.
Howells, Walter J., Medical Lake.

WEST VIRGINIA.

Noome, A. J., Wheeling.
Hall, H. M., Wheeling.
Rigney, John F., Hinton.
Brown, C. M., Mt. Hope.
Dempsey, Wm. E., Cumberia.
Gardner, M. E., Morgantown.
Howard, Edw. W., Fairmont.
Coplin, O. W., Zackville.

WISCONSIN.

Klmergreen, Ralph, Milwaukee.
Conklin, Geo. H., Superior.
Rene, F. A., Superior.
Armstrong, C., Boscobel.
Reed, Wm. W., Jefferson.
Wade, Frank Swan, New Richmond.
Thomson, Wm. J., Briggsville.
Todd, Sam'l Gordon, Neenah.
Westgate, Floyd J. E., Kiel.
Bayer, Elizabeth D., Appleton.
Dwight, Corydon G., Darlington.

# The Public Service.

## Army Changes.

Memorandum of changes of station and duties of medical officers, U. S. Army, week ending April 2, 1904:

Patton, I. W., asst.-surgeon, relieved from duty on transport *McClellan* and ordered to Fort Hamilton, N. Y.

Devereux, Thomas, asst.-surgeon, relieved from duty on transport *Sumner* when it shall go out of commission, and ordered to Manila, P. I., for duty.

Pipes, Henry F., Foster, Charles L., Loving, Robert C., Brown, Orville G., Whaley, Arthur M., Lamson, Theodore, Snyder, Craig R., Bingham, Ernest G., Heysinger, Jas. D., Smith, Lloyd L., and Huggins, Jno. R., asst.-surgeons, on completion of course of instructions at the Army Medical School, this city, will proceed to Manila for duty.

Klersted, Henry S., asst.-surgeon, on completion of course of instructions at the Army Medical School, in this city, will proceed to Fort Myer, Va., for duty.

Howell, Park, asst.-surgeon, on completion of course of instructions at the Army Medical School, this city, will take station at Fort McPherson, Ga.

Harvey, Philip F., asst.-surgeon general, granted extension of thirty days to present leave of absence.

Stedman, Chester J., asst.-surgeon, granted fifteen days leave, to take effect on being relieved from duty at the Army Medical School, Washington, D. C.

Powell, Wm. A., asst.-surgeon, granted fourteen days' leave.

Stark, Alexander N., asst.-surgeon, assumed the duty of attending surgeon, Washington, D. C.

Shook, Jay R., asst.-surgeon, on the completion of course of instruction at the Army Medical School, Washington, will proceed to Fort Leavenworth, Kan., for duty to relieve First Lieutenant Ralph S. Porter, asst.-surgeon, U. S. Army.

Porter, Ralph S., asst.-surgeon, on being relieved from duty at Fort Leavenworth, Kan., by Asst.-Surgeon Shook, U. S. Army, will proceed to Fort Niobrara, Neb., for duty.

Miller, Benham W., asst.-surgeon, on completion of course of instruction at Army Medical School, Washington, will proceed to Fort Screven, Ga. for duty to relieve First Lieutenant Harry L. Gilchrist, asst.-surgeon, U. S. Army.

Gilchrist, Harry L., asst.-surgeon, on being relieved from duty at Fort Screven, Ga., by Asst.-Surgeon Benham R. Miller, U. S. Army, will proceed to U. S. Army General Hospital, Washington Barracks, Washington, D. C., for duty.

Jonnemann, George F., asst.-surgeon, on the completion of the course of instruction at the Army Medical School, will proceed to Fort Bliss, Texas, for duty.

Miller, Edgar A., asst.-surgeon, on the completion of the course of instruction at the Army Medical School, will proceed to Fort Clark, Texas, for duty.

Toft, William H., asst.-surgeon, on the completion of the course of instruction at the Army Medical School, will proceed to Fort Snelling, Minn., for duty.

Skinner, George A., asst.-surgeon, on being relieved at Fort Snelling, Minn., will proceed to Fort Harrison, Mont., for duty.

Newgarden, George J., asst.-surgeon, on being relieved at Fort Harrison, Mont., will proceed to San Francisco, and report to commanding general, Department of California, for transportation to Manila, P. I.

The following named asst.-surgeons, on the completion of the course of instructions at the Army Medical School, will proceed to the posts designated after their respective names for duty:

Noble, Robert R., U. S. Army General Hospital, Washington Barracks, D. C.

Van Poole, Gideon McD., Fort Stevens, Ore., Department of the Columbia.

Mabee, James I., Fort Casey, Wash., Department of the Columbia.

Jones, Percy L., Fort Monroe, Va., Department of the East.

Palmer, Fred W., Jefferson Barracks, Mo., Department of the Missouri.

Besley, John R., Fort Thomas, Ky., Department of the Lakes.

Stedman, Chester J., Columbus Barracks, Ohio, Department of the Lakes.

Siler, Joseph F., Fort Logan, Colo., Department of Colorado.

Brewer, Isaac W., contract surgeon, granted twenty days' leave of absence, with permission to apply for an extension of ten days.

Decker, George M., contract dental surgeon, granted leave of absence for one month, to take effect on his return to Fort Logan, Colo., from Fort Grant, Ariz.

Macy, Fred S., contract surgeon, granted fourteen days' leave of absence, to take effect about April 15.

### Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending April 2, 1904:

Edgar, J. M., surgeon, detached from the *Wisconsin*, and ordered to the *Minneapolis*.

Traynor, J. P., asst.-surgeon, detached from the *Prolic* and ordered to the *Albany*.

Oman, C. M., asst.-surgeon, detached from the *Monadnock* and ordered to the *Prolic*.

Marcour, R. O., asst.-surgeon, detached from the *Dixie* and ordered to duty with the Marine Battalion at Guantanamo, Cuba.

High, W. E. G., asst.-surgeon, detached from the *Constellation* and ordered to the Midway Islands for duty with the Marine detachment at that place, sailing from San Francisco, April 8, via the *Supply*.

### Marine-Hospital Service.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service, for the seven days ended March 31, 1904:

Wandin, Eugene, surgeon, granted leave of absence for one month from April 1, 1904, on account of sickness.

Rosenau, M. J., P. A. surgeon, detailed to represent the Service at meeting of Tuberculosis Committee, College of Physicians, Philadelphia, March 29.

Cumming, H. S., P. A. surgeon, granted leave of absence for ten days from April 5.

Lavinder, C. H., P. A. surgeon, granted leave of absence for two days from March 29. Granted three days' extension of leave of absence from March 31.

Grubbs, S. B., P. A. surgeon, granted ten days' extension of leave of absence from March 31.

Billings, W. C., P. A. surgeon, granted leave of absence for two months and three days from April 30, 1904, with permission to go beyond the sea.

Richardson, T. F., asst-surgeon, detailed to attend conference of state health officer and county health officers of Texas March 31.

Amesse, J. W., asst.-surgeon, granted leave of absence for two months and fifteen days from May 1.

Boggess, J. J., asst.-surgeon, granted leave of absence for two days from March 30.

BOARDS CONVENED.

Board to meet at Washington, D. C., to consider the construction or purchase of boarding steamers for the quarantine stations at San Francisco and Port Townsend, Wash.; also to consider type of launch for boarding or inspection of vessels at the Key West Quarantine and at Havana, Cuba; also to consider the feasibility of repairing the hull of the launch *Spray* at the Delaware Breakwater Quarantine, and placing new motive power therein. Detail for the board: Asst.-Surgeon-General A. H. Glennan, chairman; Asst.-Surgeon-General W. J. Petties; Asst.-Surgeon-General H. D. Geddings, recorder.

Board convened at Baltimore, April 4, for the physical examination of officers of the Revenue-Cutter Service for promotion. Detail for the board: Surgeon H. R. Carter, chairman; Asst.-Surgeon C. W. Wille, recorder.

Board convened at San Francisco, April 4, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon W. G. Stimpson, chairman; Asst.-Surgeon Carl Ramus, recorder.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended April 1, 1904:

SMALLPOX—UNITED STATES.

Colorado: Denver, Jan. 30-Feb. 27, 22 cases, 1 death.
Florida: Jacksonville, March 19-24, 1 case.
Illinois: March 19-24, Chicago, 10 cases; Galesburg, 3 cases.
Kentucky: Burlington, to March 26, 16 cases; Covington, March 19-26, 3 cases; Springfield, March 28, 6 cases.
Louisiana: New Orleans, March 19-26, 2 cases, imported.
Maine: Massawaska region, March 19-26, 2 cases.
Maryland: Baltimore, March 19-26, 2 cases.
Massachusetts: Lowell, March 19-26, 1 death.
Michigan: March 19-26, Detroit, 2 cases; Grand Rapids, 2 cases; March 12-19, at 32 localities present.
Missouri: St. Louis, March 19-26, 4 cases.
New Jersey: March 19-26, Camden, 2 cases, 1 death; Trenton, 1 case; Jersey City, March 20-27, 1 case, porter on train.
New York: New York, March 19-26, 1 case.
Ohio: Cincinnati, March 11-18, 1 case, 1 death; Cleveland, March 19-26, 8 cases; March 19-26, Dayton, 8 cases, 1 death; Warren, 1 case; Lorain, March 20-27, 2 cases, probably imported.
Pennsylvania: March 19-26, Johnstown, 2 cases; Philadelphia, 35 cases, 6 deaths; Pittsburg, 8 cases, 1 imported.
South Carolina: Charleston, March 19-26, 4 cases, 1 death; Greenville, March 12-19, 4 cases.
Tennessee: March 19-26, Memphis, 80 cases, 1 death; Nashville, 2 cases.
Wisconsin: Milwaukee, March 19-26, 3 cases.

SMALLPOX—FOREIGN.

Belgium: Antwerp, March 5-12, 4 cases, 3 deaths.
Colombia: Barranquilla, Feb. 29-March 18, 1 death.
France: Lyons, Feb. 27-March 5, 1 death; Paris, March 5-12, 82 cases, 2 deaths.
Great Britain: March 12-19, Birmingham, 1 case; Cardiff, 1 case; Glasgow, March 11-18, 21 cases, 2 deaths; March 5-12, Edinburgh, 6 cases, 1 death; Hull, 7 cases; Leith, 1 case; London, 21 cases; Manchester, 3 cases; Newcastle-on-Tyne, 3 cases; Nottingham, 18 cases, 3 deaths; South Shields, 3 cases.
India: Bombay, Feb. 23-March 1, 14 deaths; Karachi, Feb. 21-28, 1 case, 1 death.
Java: Batavia, Feb. 13-20, 20 cases, 8 deaths.
Mexico: City of Mexico, March 6-13, 16 cases, 7 deaths.
Netherlands: Amsterdam, March 12-19, 3 cases, 3 deaths.
Russia: Feb. 27-March 5, Moscow, 8 cases, 3 deaths; St. Petersburg, 12 cases, 1 death; Odessa, March 5-12, 1 case.
Spain: Santander, March 7-14, 4 cases, 1 death.
Turkey: Alexandretta, March 5-12, 1 case; Constantinople, March 6-13, 8 cases; Smyrna, Feb. 21-28, 1 case.

YELLOW FEVER.

Ecuador: Guayaquil, Feb. 27-March 5, 3 deaths.
Mexico: Vera Cruz, March 12-19, 1 case.

CHOLERA.

India: Calcutta, Feb. 13-20, 34 deaths; Karachi, Feb. 21-28, 2 cases, 1 death; Madras, Feb. 13-20, 3 cases, 1 death.
Turkey in Asia: Feb. 22, Bozara, 7 cases, 7 deaths; Kermit Ali, 4 cases, 2 deaths.

PLAGUE—INSULAR.

Philippine Islands: Manila, Feb. 6-13, 1 case, 1 death.

PLAGUE—FOREIGN.

China: Hongkong, Feb. 6-13, 2 deaths.
India: Bombay, Feb. 23-March 1, 632 deaths; Calcutta, Feb. 13-20, 73 deaths; Karachi, Feb. 21-28, 113 cases, 96 deaths; Rangoon, Feb. 10, 1 case.
Mauritius: Feb. 18-25, 3 cases, 2 deaths.
Peru: Lima, March 31, 28 cases reported.

## Medical Organization.

**Medical Society of the Missouri Valley.**—At the seventeenth annual meeting of this society held in Lincoln, Neb., March 24, the following preamble and resolutions were unanimously adopted:

WHEREAS, At the present time there is a most praiseworthy effort being made to federate, unify and bring into one grand, compact organization the entire medical profession of America; and

WHEREAS, The promoters of this great work in the various state and county societies, and in the American Medical Association, have met with unqualified success, as evidenced by the fact that already there are enrolled over 200 component societies; therefore, be it

*Resolved*, That the members of the Medical Society of the Missouri Valley are in sympathy with this progressive movement, and heartily endorse the plan of organization. Be it further

*Resolved*, That this society desires to become a district or auxiliary society in affiliation with the American Medical Association.

### Florida.

Dr. J. Harris Pierpont, councilor of the First District, reports the organization of the Walton and Washington county medical societies. This completes his district, except one county, which has too few physicians to form a society.

WALTON COUNTY MEDICAL SOCIETY.—This society was organized, March 18, with the following officers: Dr. George P. Henry, president; Dr. C. A. Landrum, vice-president, and Dr. W. H. Stinson, secretary-treasurer, all of De Funiak Springs.

WASHINGTON COUNTY MEDICAL SOCIETY.—This society was organized, March 18, at Chipley, with the following officers: Dr. F. C. Wilson, president; Dr. J. H. Farrier, vice-president, and Dr. J. S. McGeachy, secretary-treasurer, all of Chipley.

### Missouri.

HANNIBAL MEDICAL SOCIETY.—This society has been reorganized on the standard plan with the following officers: Dr. John S. Howell, president; Dr. Florence Janet Reid, secretary, and Dr. John J. Boura, treasurer.

### Montana.

MONTANA, NORTH DISTRICT, MEDICAL SOCIETY.—A meeting was held at Great Falls, March 24, to reorganize this society, which has been inactive for several years. Dr. John A. Sweat was made temporary chairman, and Dr. Charles T. Sweeney temporary secretary, both of Great Falls. Dr. Ernest Crutcher, Great Falls, representing the Montana State Medical Association, presented the constitution and by-laws of that body, and a committee on by-laws was appointed, consisting of Drs. Albert F. Longeway, Earle Strain, and Charles T. Sweeney, all of Great Falls.

### Texas.

COLORADO COUNTY MEDICAL ASSOCIATION.—The organization of this association was noted in THE JOURNAL of March 26. Dr. Robert H. Harrison, Columbus, was elected president; Dr. Charles G. Cook, Weimer, vice-president; Dr. Charles M. Blair, Columbus, secretary; Dr. Robert H. Harrison, Jr., Columbus, delegate to the state association, and Drs. Harry R. Bowers, Columbus, Charles A. Williamson, Columbus, and Samuel B. MacLeary, Weimar, were elected censors.

FIFTEENTH DISTRICT MEDICAL SOCIETY.—Pursuant to a call issued by Dr. Holman Taylor, Marshall, councilor of the Fifteenth (Northeastern) District, delegates from the seventeen counties which make up the district met at Marshall, March 21, and passed resolutions proposing that the Northeast Texas Medical Association be constituted the official medical society of the Fifteenth District on its compliance with the standard by-laws. Dr. William G. Jameson, Palestine, was elected chairman, and Dr. E. H. Hamilton, Longview, secretary of the temporary organization.

## Therapeutics.

[Our readers are invited to send favorite prescriptions or outlines of treatment, such as have been tried and found useful, for publication in these columns. The writer's name must be attached, but it will be published or omitted as he may prefer. It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

### Chronic Dyspepsia in Children.

In the treatment of chronic dyspepsia in children, which term includes all the digestive disorders of childhood which are not acute, and not merely symptomatic, W. R. Jordan, in *Merck's Archives*, states that drug treatment is necessary in all cases. During an actual catarrhal attack, or where the subjective symptoms are prominent, the author recommends the following to be given three times a day before meals:

| | | |
|---|---|---|
| R. | Sodii bicarb. ..... gr. vi | 40 |
| | Tinct. nucis vom. ..... | |
| | Spts. chloroformi, āā ..... gtt. ii | 12 |
| | Aq. menth. pip. q. s. ad ..... 3ii | 8 |

M. Sig.: At one dose, to be repeated before each meal.

If constipation is present it must be corrected. For this purpose he recommends cascara combined as follows:

| | | |
|---|---|---|
| R. | Ext. cascarae sagradae flu. ..... m. x | 65 |
| | Tinct. nucis vom. ..... m. ii | 12 |
| | Tinct. belladonnae ..... m. v | 30 |
| | Glycerini ..... m. x | 65 |
| | Aq. menth. pip. q. s. ad ..... 3ii | 8 |

M. Ft. haustus. Sig.: To be taken at one dose, at bedtime.

In some cases the constipation may be relieved by the administration of rhubarb or magnesia before meals.

When the constipation has been corrected the following should be prescribed to increase the strength and appetite of the patient:

| | | |
|---|---|---|
| R. | Tinct. ferri chloridi ..... gtt. lxxv | 5 |
| | Liq. strych. (1 per cent.) ..... gtt. xv | 1 |
| | Aq. chloroformi q. s. ad ..... 3iv | 120 |

M. Sig.: Two teaspoonfuls after each meal in water.

Where headaches of more or less distinctly periodic type complicate the condition, the author recommends antipyrin in 5 grain (.30) doses two or three times daily. The diet must be regulated by the prohibition of sweets, pastry, pickles and tea especially during the attack. In severe cases the diet may be restricted to beef tea and mutton broth, with dry toast, gradually introducing milk and meat into the diet. Later and in milder cases the following rules should be observed: Meals at regular intervals, not too long; nothing between meals; no tea or coffee, no pickles, no sauces or highly seasoned food. Potatoes should be eliminated from the diet until convalescence. The abdominal organs and thighs should be well protected by the clothing, while not too thick and heavy over the chest. The parents should then be instructed to take the child out of doors into the open air to a generous extent. Children under eight should be kept away from school, and no child should be allowed to go to school who is described as eating "no breakfast."

### Eczema.

Gaucher, in *Jour. de Pract.*, in speaking of the treatment of eczema, states that in eczema of the scalp the crusts should be removed by applying compresses dipped in hot water and covered with rubber tissue. In women the crusts are best removed by the aid of oily and emollient applications, and by local applications of steam. After removing the crusts the author recommends the application of the following to the scalp:

| | | |
|---|---|---|
| R. | Olei cadini ..... 3v | 20 |
| | Olei amygdalae exp. ..... 3i | 30 |

M. Sig.: Apply locally night and morning.

The same treatment may be pursued in eczema of the beard and eyebrows. In these latter forms the following ointment is of service:

| | | |
|---|---|---|
| R. | Zinci oxidi ..... 3iss | 6 |
| | Hydrarg. chloridi mitis ..... gr. xlv | 3 |
| | Adipis ..... 3iiss | 75 |

M. Sig.: Apply locally.

In sycosis of the beard the following is recommended:

| | | |
|---|---|---|
| R. | Hydrarg. subsulph. flavi ..... gr. xv-xlv | 1.-3 |
| | Adipis ..... 3i | 30 |

M. Sig.: Apply locally.

In eczema of the nostrils, after syringing the nose with borated water, apply pieces of cotton saturated with the following ointment:

| | | |
|---|---|---|
| R. | Acidi borici | |
| | Acidi tannici | |
| | Hydrarg. chloridi mitis | |
| | Zinci oxidi, āā ..... gr. x | 65 |
| | Liq. petrolati ..... gr. c | 6 65 |

M. Ft. unguentum. Sig.: Apply on pledgets of cotton; or:

| | | |
|---|---|---|
| R. | Acidi salicylici ..... gr. i-v | 06-.30 |
| | Liq. petrolati ..... 3i | 30 |

M. Sig.: Apply locally to the affected areas on pledgets of cotton.

In the treatment of eczema of the lips use an application of an ointment of boric acid or of zinc oxid 10 per cent. or of salicylic acid ointment 1 per cent. strength. At night the lips should be protected by a rubber band. When eczema attacks the eyelids compresses of hot water and linden flowers or boric acid should be applied locally, and the following solution dropped into the eye:

| | | |
|---|---|---|
| R. | Aluminis (burnt) ..... gr. i | 06 |
| | Aquae destil. ..... 3ii | 8 |

M. Sig.: Drop one drop into the inner angle of the eye night and morning.

When the eyelashes are involved they should be epilated and the yellow oxid of mercury applied locally or cauterization with copper sulphate. When the auditory canal is attacked, an infusion of althea should be employed together with applications of the oil of cade.

In the acute stage of eczema of the anus moist compresses must be applied locally and later on the application of the oil of cade; or an ointment of calomel, or of the extract of krameria. When fissure exists cauterization of the fissure with copper sulphates should be resorted to. To relieve the itching a 5 per cent. chloral solution or a 10 per cent. solution of carbolic acid should be applied locally. To relieve the sub-

jactive symptoms and to effect a cure when the scrotum is involved moist applications should be applied, together with ointments of zinc oxid or bismuth subgallate. If the eczema is dry, apply dilute oil of cade, and, if moist, a powder consisting of 2 parts per 100 of salicylic acid.

When the glans is involved local baths are recommended three times daily with a solution of resorcin, 1-200, and in the intervals the following powder should be applied:

℞. Mag. carb. ..... ℥i 30
Aristol ..... gr. xxx 2
M. Sig.: Apply locally after the bath.

And when involving the vulva in the female, compresses of a saturated solution of boric acid or of chloral, 1-200, should be applied, followed by ointments of zinc oxid or calomel or bismuth subgallate.

To relieve eczema occurring on the lower extremities, rest in bed is indicated, wet compresses and the following ointment:

℞. Olei cadini ..... ℥iiss 10
Zinci oxidi ..... ℥ss 15
Liq. petrolati ..... ℥v 20
M. Ft. unguentum. Sig.: Apply locally.

And when eczema attacks the palms and soles, the parts should be washed with a solution of the tincture of green soap night and morning. Later, oil of cade or a 2 per cent. ointment of salicylic acid may be applied. When the nails are involved an application of pure oil of cade or a 5 per cent. solution of salicylic ointment serves the purpose.

Brodier, in *Med. Age*, recommends internal treatment in eczema occurring in gouty and rheumatic cases. His list of preparations includes quinin, colchicum, digitalis, ergot, and belladonna.

Brocq, in the same periodical, recommends the following combination:

℞. Quin. hydrobrom. ..... gr. i |06
Ext. colchici ..... gr. 1/6 |01
Pulv. digitalis fol. ..... gr. 1/3 |02
M. Sig.: Two or three such pills daily; or:
℞. Quin. hydrobrom. ..... gr. i |06
Ext. belladonnæ ..... gr. 1/60 |001
Ext. gentianæ ..... gr. i |06
M. Sig.: One such pill four to eight times daily.

Arsenic and sulphur must be avoided, according to the author, in all acute eczemas. A milk diet should be advised. The local treatment in the beginning should consist of starch cataplasms applied on muslin and removed every three or four hours. Chamomile lotion is also of service. In old arthritic cases powders are better than cataplasms. The best are starch and lycopodium, which may be mixed with zinc oxid, bismuth and camphor. Ointments such as the glycerol of starch, unguentum aquæ rosæ, or a mixture of zinc oxid, starch, and lanolin are useful. Picric acid 1-200 solution is good in acute eczema, not accompanied by much inflammation, to relieve the itching.

## Medicolegal.

**Reaching Climacteric Before Recovery from Injuries.**—At the time of the trial of the personal injury case of Keefe vs. the Norfolk Suburban Street Railway Co., the plaintiff was 39 years and 11 months old, and contended that, if she should reach her climacteric before she had fully recovered, her suffering might be prolonged as one of the results of the accident. The company, on the other hand, contended that on the evidence the possibility that she would reach her climacteric before her full recovery from the accident was so remote that it should not be considered by the jury as an element of damage, and at the close of the evidence asked the court so to rule, which it declined to do, submitting this question to the jury. The Supreme Judicial Court of Massachusetts overrules an exception to this, holding that the whole question was one of fact for the jury, as, in view of all the evidence, it could not be said as a matter of law that the likelihood referred to was so remote as to call for the instruction requested by the company.

**Letting Jury Know Physicians Were Appointed by Court.**—Two of the errors complained of in the personal injury case of Stroh vs. the South Covington & Cincinnati Street Railway Co., consisted in the fact that the trial court permitted it to be known by the jury that the two physicians who testified in the case as to the extent of the plaintiff's injuries had been appointed by the court, and the misconduct of the attorney for the company in stating to the jury in his argument that these physicians had been appointed by the court. The Court of Appeals of Kentucky does not see how this could have prejudiced the plaintiff's case, who appealed on the ground that the damages awarded her were inadequate. It says that the doctors had been appointed by the court, under that large discretion which it possessed. The question was not material how they came to know the facts of which they deposed, but rather the truth of their evidence after they were on the stand. The plaintiff could not have been prejudiced by the knowledge on the part of the jury that these two witnesses came from an entirely impartial appointment. Nor does the Court of Appeals think that the plaintiff was prejudiced by the refusal of the trial court to permit her counsel to further cross-examine an expert witness after he had been thoroughly examined, and had told all he knew on the subject in hand. It says that any further cross-examination of him would be an unnecessary prolongation of the trial, which the court, in its wisdom, had the right to curtail. [See editorial this week.]

**Province of Expert Witness.**—The Supreme Court of Georgia says, in Travelers' Insurance Co. vs. Thornton, that under a prior decision it was left for the jury to say whether the insured's injury was caused by a fall and aggravated by hernia, or whether the hernia was a contributing cause to the injury. A physician could give an opinion on hypothetical facts on what he had heard other witnesses testify in the case, or on facts discovered by his own investigation. He could state what, in his opinion, would have been the effect of a blow to the insured without a hernia, and what the effect of the blow with the hernia. An expert can testify as to what was the cause of death, or of an injury, or as to the effect of disease, or as to the effect of a blow on one sound or on one unsound. He can give his opinion on physical facts or as to the medical facts, but he can not determine the legal classification of such facts. It was not proper for him to use the language of the decision and testify that the hernia was a "contributing cause." That was a mixed question of law and fact, to be determined in the light of all the evidence; and it would have been as improper to permit such testimony as it would have been in an ordinary case to allow a witness to say that a particular act amounted to negligence, or to contributory negligence, or that another fact was the proximate or remote cause. The expert may aid the jury, but he can not act as a member of the jury; nor, while on the stand, can he transcend the functions of a witness, and under the guise of giving testimony state a legal conclusion.

**Examining Boards and Redress of Rejected Applicants—Evidence.**—The Supreme Court of North Carolina says, in the case of Ewbank vs. Turner and others, that the power of the legislature to require examination and certificate as to the competency of persons desiring to practice professions or skilled trades is upheld, after a review of the authorities, in State vs. Call, 121 N. C. 643. That decision was reaffirmed in State vs. McKnight, 131 N. C. 717, the court calling attention to the fact that the state exercises this police power for the protection of the public from impostors and incompetents, and not to the end of conferring exclusive privileges on any particular body of men, for to do the latter is prohibited by the state constitution. It is a power to be exercised for the public good, and the legislature is to judge of the method of appointing the examiners, and can prescribe the nature of the examination, unless it appear plainly that the power to regulate is used in reality in violation of the guaranties in the constitution, and for the purpose of conferring exclusive privileges, and not solely for the protection of the public. State vs. Biggs (at this term), 46 S. E. Rep. 401; page 675 of The Journal, March

5, 1904. The code, the court goes on to say, provides for a board of examiners, to consist of six members of the North Carolina Dental Society, to be elected by said society. The presumption is that this honorable body will elect six of its ablest and most prominent members for the important duty of keeping up the standard of their profession by a just, reasonable and impartial examination of applicants. Should this important duty be neglected and incompetent or unworthy members be chosen, the remedy is by legislative repeal, or change of the method of selecting the board. Section 3151 provides that "said board shall grant a certificate of proficiency in the knowledge and practice of dentistry to all applicants who shall undergo a satisfactory examination, and who shall receive a majority of votes of said board on such proficiency." The lawmaking power having intrusted such examination to the board thus constituted, and required that the examination shall be satisfactory to them, and such requirements being reasonable and in violation of no constitutional provision, the courts can not intervene and direct the board to issue a certificate to one who the majority of the board have held has not passed a satisfactory examination, because, on the examination of experts, the court or jury might think the examination of the plaintiff ought to have been satisfactory to the board. That is a matter resting in the consciences and judgment of the board, under the provisions of the law, and the courts can not by a mandamus compel them to certify contrary to what they have declared to be the truth. Had the board refused to examine the applicant on his compliance with the regulations, the court could by mandamus compel them to examine him; but it can not compel them to issue him a certificate, when the preliminary qualification required by law, that the applicant shall be found proficient and competent by the examining board, is lacking. One remedy, if there should ever happen such abuse of trust as that the board "wrongfully, unlawfully, unjustly, arbitrarily, and without just cause or reason" declined to issue a license, would be, as already stated, by the legislature repealing the act, or providing a different method of selecting the board, or regulating the method or course of examination, or prescribing a review of the finding of the board by some other body, if the General Assembly should think proper. Another remedy would be to follow the precedent set by applicants for license to practice law, who, when rejected, study their prescribed course over again, and stand for examination at the next regular day. This is, perhaps, the most sensible course, for no man ever knows his profession too well. Another remedy still: If the applicant avers his rejection was caused by improper motives, his remedy is an action for damages against the individuals composing the board; alleging bad faith or arbitrary disregard of their duties, or improper animus against the plaintiff, or other malversation in their discharge of duty. In such action it might be difficult to prove the charges, unless by declarations made by the defendants themselves, for certainly the examination paper of the plaintiff himself would not be competent, in the first place, since, though experts might testify to its sufficiency in their judgment, that does not negative the good faith of the board, whose judgment, if exercised in good faith, is a protection to them. Malicious, illegal, or arbitrary action must be shown by direct evidence, and not by inference to be drawn by the jury from the fact that the opinion of witnesses introduced as experts may differ from the opinion of a legal board of examiners as to the sufficiency of the examination. It is only when there shall be other evidence first introduced, laying a sufficient ground for a charge of bad faith and misconduct, that the examination paper of the plaintiff could possibly be competent, and then only in corroboration of the evidence first introduced. And in no aspect could the papers of other applicants at the same time and place be put in evidence, for, even if they had been admitted to practice on insufficient answers, the plaintiff was not hurt thereby, and the introduction of irrelevant matter would only confuse the issue, which would be whether the plaintiff was refused a certificate, though he was shown to be qualified by his answers, by the arbitrariness, improper animus, and misconduct of the examining board.

# Current Medical Literature.

## AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

### American Medicine, Philadelphia.

*March 26.*

1 *Abdominal Pain. J. H. Musser.
2 *Some Practical Points in Abdominal Surgery, with Special Reference to a Simple Technic for Appendicectomy and Intestinal Anastomosis. Frederick H. Wiggin.
3 *Torticollis and Spinal Curvature Due to Eyestrain. George M. Gould.
4 Fatal Pulmonary Embolism Following Ascending Phlegmasia Alba Dolens. John G. Sheldon.
5 Raynaud's Disease. David G. Peyton.
6 Bradycardia, with Report of an Unusual Case. J. William Watson.

1. **Abdominal Pain.**—Musser remarks that pain is a symptom which more than all others leads to the recognition and localization of abdominal disease, and it is fortunate when a patient is intelligent enough to describe it accurately. He first notices the associated expression of pain and spasm of the muscles, which is one of the most valuable indications. Its absence is of much significance under certain circumstances. It is wanting, of course, where there is little or no muscle, as in case of atrophied abdominal walls. In a case of perforating gastric ulcer with oncoming peritonitis operated on by Keen within six hours of perforation, no spasm or resistance was detected. Similar cases have occurred in cholecystitis where mural atrophy existed. The muscle spasm disappears with the onset of toxemia, and hence a rapidly lessening resistance is a matter of grave significance. Tenderness of the cutaneous surface, hyperalgesia, is also of importance; if it exists and then disappears, as may also spasm and pain, the change is of ill omen unless all the symptoms subside. The absence or the disappearance of hyperalgesia means gangrene or perhaps perforation. Passing over the subject of lead poisoning, Musser speaks of abdominal pain due to uremia, and reports a case showing its simulation of perforating gastric ulcer. He mentions hysteria and neuroses for the purpose of disclaiming against the accepted ideas of the frequency of abdominal pain of such origin. A number of conditions of abdominal pain not due to disease below the diaphragm are enumerated, such as the crises of locomotor ataxia and other organic spinal cord diseases, spondylitis rhizomelique, cancer and caries of the vertebra, aneurism of the thoracic aorta, diaphragmatic pleurisy and rheumatism of the diaphragm. Pneumonia may often produce abdominal pain, and he has been repeatedly called in to decide as to the necessity of abdominal operation when pneumonia existed. He also refers to cardiac affections, the epigastric pain of acute pericarditis and abdominal pain due to gastric affections. Epigastric hernia may give rise to symptoms simulating gastric affections or gall-bladder and gall-duct diseases. Hepatic and renal pain are also mentioned, and pancreatic pain. He believes that mild cases of pancreatitis are much more frequent than generally supposed. The disappearance of pain must not lead to any false security and we must look for the slightest suggestion of toxemia. A leucocyte count is often of great value. A low white count without improvement in symptoms and especially of the general toxemia symptoms, is of serious import. The absence of pain may be of value in the diagnosis, as, for example, in a case of intestinal paresis here reported.

2. **Abdominal Surgery.**—Wiggin's article is an elaborate one, with many illustrations, describing the method of suturing the appendix by the passing of three sutures across the site of the appendix before it is excised, subsequently tying them so that they are out of sight in the fold and supplementing them with four catgut Lembert sutures to complete the operation. He also describes his method of intestinal anastomosis, which consists in passing the sutures through the whole thickness of the bowel and tying them so that they are out of sight with the closure of the wound, making the last suture a Lembert. The sutures and knots are all left inside the gut except the last one. The technic is described in detail, as is also the after-treatment.

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3. **Eye-Strain.**—Gould reports a case of torticollis and spinal curvature due to eye-strain and discusses other cases reported in the literature. The practical points he makes are that habitual abnormal position of the head, due to errors of refraction, is frequently the cause of spinal curvature. Heterophoria, which has been considered the cause, is usually secondary to refractive error, the proper correction of which, at an early age, cures the heterophoria, torticollis and spinal curvature.

**New York Medical Journal.**
*March 26.*

7 *Best Time for Repairs of Laceration of the Cervix. Robert L. Dickinson.
8 Case of Cerebral Diplegia (so-called "Spastic Spinal Paraplegia") with Pseudo-Hypertrophy. P. W. Nathan.
9 *Effect of Violet Rays on Nebulæ. Alfred W. Herzog.
10 *Primary Tracheolorrhaphy; a Restatement. George Donahue.
11 Laparotomy for Gunshot Wounds of Abdominal Viscera, with Report of Five Successful Cases. Robert W. Johnson.
12 *Use of Injections of Sodium Cinnamate in Locomotor Ataxia. Paul Barthotow.
13 Stigmatic Errors: Their Causes, Dangers and Prevention. (To be continued.) Lewis G. Cole.
14. Normal Saline Solution. A Review of Some of Its Clinical Uses. E. Payne Palmer.
15 *Some Clinical Features of Diseases of Gall Bladder and Bile Ducts Due to Gallstones, and the Indications for Their Surgical Treatment. Charles A. Elsberg.
16 Influence of Typhoid Fever on the Nervous System. C. C. Hermans.

7. **Cervical Lacerations.**—Dickinson points out the amount of trauma which the cervix receives during labor and the impossibility of proper repair of the injuries immediately after, at least in many cases. He would operate only between the third and fifteenth day, after the parts have become more normal and recognizable, unless the cervical laceration seems to be the cause of postpartum hemorrhage. His practice is to sew up all cervical tears in the first week in conjunction with the perineal operation when the pelvic floor injury is of such a character that a few days' delay is desirable, and to restore severe injuries to the cervix from the third to the tenth day after the delivery.

9. **Effects of Violet Rays on Nebulæ.**—Herzog calls attention to the phenomena occurring when a nebula, as produced by one of the numerous nebulizers on the market, is passed around a vacuum electrode in action. As the current passes around the electrode it will be observed that the cloud of vapor develops with much greater rapidity and greater volume and that instead of falling to the floor or filling the middle portion of the room, it rises to the ceiling and floats around the room. The violet rays thus subdivide the vapor in such a manner as to cause it to be of much greater fineness. He thinks this fact may be of some importance since the finer the vapor the more readily are the medicaments which it carries absorbed by the respiratory organs.

10. **Primary Tracheolorrhaphy.**—Donahue refers to a former article in which he advocated repair of the lacerated cervix within twenty-four to thirty-six hours after labor, and supports his former position by new arguments. He thinks the reaction, the disturbances due to the lacerated cervix, the possibility of the introduction of pathogenic germs, etc., call for early repair.

12. **Sodium Cinnamate in Tabes.**—Basing himself on the affinity of sodium cinnamate for nucleinic acid and the leucocytes, and its power of setting the current of the latter in the direction of any local exacerbation of the disease, Bartholow has employed sodium cinnamate injections in cases of tabes, so far with gratifying results. He has employed sodium cinnamate solution, 1 in 10 in sterile water, beginning with 20 minims and gradually raising the amount to 60 minims, hypodermically injected in the interscapular space. There was a decided gain in body weight and strength; some of the nervous phenomena diminished in severity and the co-ordination was improved. He thinks sodium cinnamate benefits the organism chiefly by promoting the appetite and digestion and consequently nutrition, but also by setting up chemical changes in the outlying regions of the degeneration in the cells and connective tissue of the nerve substance.

15. **Gall-Bladder Disease.**—Elsberg sums up the indications for operation as follows: It is contraindicated with mild symptoms, especially if the diagnosis is in doubt; with recurrent mild attacks with long intervals of health; in acute obstruction of the common bile duct, and in any disease which would contraindicate a surgical operation of any kind unless under vital indications. Operative treatment is indicated in acute inflammatory diseases of the gall bladder with signs of severe infection or peritoneal invasion. Also in cases with very frequent mild attacks, which incapacitate the patient from work, which are accompanied by much loss of flesh and strength, or in which the patient is in danger of acquiring the morphin habit. Also in case of a persistent biliary fistula, and in the rare cases in which the symptoms are due to adhesions of the normal gall bladder to neighboring organs. He thinks that in the future medical men will agree on more early and radical treatment and cholecystectomy will be more frequently performed.

**Medical News, New York.**
*March 26.*

17 *Pneumatic Tourniquets: With Special Reference to Their Use in Craniotomies. Harvey Cushing.
18 *Case of Strangulated Inguinal Hernia; Death from Fecal Drowning During Etherization. Edward E. Goodman.
19 *History of Saliva, Its Physiology, Chemistry and Pathology. Harold M. Hays.
20 Surgery of the Gall Bladder and Ducts. John F. Erdmann.
21 *Regulation of the Duration of Exposure and the Distance from the Tube in X-ray Therapy. Manton G. Williams.
22 *Sea Bathing in Some Forms of Skin Diseases. H. Abrahams.
23 *Pericarditis; with the Report of Cases. George P. Faul.
24 *Indicators in Gastric Analysis, with Special Reference to Tropeolin 00. A. L. Benedict.
25 *Physiologic and Clinical Aspects of Hydrotherapy with Its Special Reference to the Treatment of Psychoses. R. D. Baker.

17. **Pneumatic Tourniquets.**—The disadvantages of the ordinary tourniquet, the possibility of producing nerve-pressure paralysis, its painfulness and its interference with the best technic of the operation, are enumerated by Cushing, who then describes the pneumatic tourniquet. It was undoubtedly suggested by the use of the distensible armlet of the Riva-Rocci blood-pressure apparatus. A similar armlet, though broader and of less distensible rubber and capable of being boiled, was constructed. By connecting it with a bicycle pump one or two quick strokes of the piston is sufficient to fill it. He has used such an arrangement many times for cocain operations on the extremities, and with the greatest satisfaction. It can be adjusted and not inflated until the moment of beginning the operation. By palpating a peripheral artery one can easily tell when a sufficient degree of inflation has been reached. In operating in minor cases without assistants he has used a small bicycle foot pump. A larger and stronger form of cylinder than those which he has employed might be used for major operations on a muscular leg or thigh. He also mentions the therapeutic use of such apparatus for increasing venous congestion of the parts and improving the nutrition in certain chronic processes such as pseudarthroses, joint tuberculosis, etc. The especial application of the pneumatic tourniquet, however, to which he devotes most of his paper, is in cases in which the skull is opened for exploratory purposes, for which a wide osteoplastic flap is required. He has used a tourniquet of this pattern in 18 of his craniotomies during the past year. The method of opening the skull and making the osteoplastic flap is described in detail, with illustrations. The application of the tourniquet is also illustrated. He applies it over a large square of gauze. In order to prevent any possible rolling of the tourniquet after inflation in cases where the shape of the head is poorly adapted to secure it, the edge of the gauze hood may be drawn up over it, fore and aft, and pinned, or else a longitudinal tape may be used for the same purpose, as shown in one of his illustrations. The tourniquet is sufficiently narrow to lie well below the inferior areas of the motor zone. It is then inflated and a shovel-shaped incision of whatever form desired made through the gauze hood and scalp to the underlying bone. There may be a momentary bleeding as the imprisoned vessels of the scalp empty themselves, but it is only exceptionally necessary to clamp any bleeding points, and then only on the concave side of the incision where some of the veins may have diplostic communication. The convex side, which is the more important, remains dry. He thinks the use

of this inflatable tourniquet is not the least factor in simplifying the procedure of craniotomy, and the belief that such an apparatus has not been heretofore used is the ground for publishing this communication.

18. **Fecal Drowning.**—Goodman reports a case similar to those reported lately by Andrews. He explains them by the fact of ether destroying the sensibility of the throat. He considers the suggestion of Andrews as to the use of local anesthesia in intestinal obstruction a good one. His patient was apparently fully conscious at the time of the accident, though undoubtedly the throat was benumbed.

19. **Saliva.**—Haya' article reviews the physiologic chemistry and pathology of saliva, and concludes that there are many interesting points, some of which have only been worked out "in embryo." He thinks new methods of diagnosis are possible, and he is at present working on tuberculous saliva to determine some points. Another indication of just as profound value is in trying to detect urea in saliva in cases of eclampsia. Other possibilities will probably suggest themselves. We may find in the future that the examination of the saliva will play an important part in the diagnostic arsenal.

21. **X-Ray Therapy.**—Williams publishes a table to show the relative effect of different distances on the *x*-rays, based on the rule that applies to all forms of radiant energy, viz., that the intensity varies inversely as the square of the distance.

| Distance. | | Relative Intensity. | | Safety limits. |
|---|---|---|---|---|
| 2 | 1 | 1.000 | 25.00 | 2.5 |
| 4 | 1/4 | .250 | 6.25 | 10.0 |
| 6 | 1/9 | .111 | 2.77 | 22.5 |
| 8 | 1/16 | .062 | 1.56 | 40.0 |
| 10 | 1/25 | .040 | 1.00 | 62.5 |
| 12 | 1/36 | .027 | .69 | 90.0 |
| 14 | 1/49 | .020 | .51 | 122.5 |
| 16 | 1/64 | .015 | .39 | 160.0 |
| 18 | 1/81 | .012 | .30 | 202.5 |
| 20 | 1/100 | .010 | .25 | 250.0 |

In the first column are the distances at two inch intervals. In the second are the relative intensities expressed in fractions. In the third are the same expressed in decimals. In the fourth are the relative intensities expressed in decimals taking the intensity at ten inches as unity. This column is useful, since ten inches is the average distance for an exposure; when one wishes to estimate the total amount of treatment given he can by means of this column reduce the exposures which may have been given at various distances to their equivalent at ten inches and then add the number of minutes. In the fifth column are the safety limits or the duration of time which it is safe to expose a patient without danger of a dermatitis. These figures are the result of an experience of nearly two thousand exposures personally given and by experiments in bringing about a redness of the skin by a continuous exposure. The figures are about one-half of those required to produce a moderate degree of redness of the skin of the forearm with a tube of one ampère and fifteen volts with an equivalent spark-gap in the secondary circuit of five inches.

He found the column of safety limits a valuable guide in radiographic work. The knowledge that a dermatitis will be produced by approximately twice the duration of these exposures under conditions that he can regulate has been of great value in directing the treatment. Its application to deep growths requires especial attention as to time and distance. The further the part is from the tube the less is the difference between the effect on the skin and the part beneath. The exposure, therefore, should be more distant and the length of duration directly as the square of the distance. By referring to the table one can determine the duration of the exposure. His rule is not to expose in ten days more than the number of minutes required to produce a dermatitis. As this point is approached the exposures are shorter and at longer intervals in order to watch the developments. As soon as the redness is reached and its degree determined, the treatment can be continued and directed according to the indications. He thinks this method has a tendency to more rational technic based on physical laws.

22. See abstract in THE JOURNAL, xli, p. 1158.

23. **Pericarditis.**—The object of Paul's article, as stated by him, is to emphasize three points: 1, the insidious development of pericarditis, and how often it is overlooked unless particularly sought for; 2, that the severe type may develop in the course of a very mild pneumonia, and 3, the difficulty of distinguishing obliterative pericarditis from acute general tuberculosis involving the serous membranes. He gives the diagnosis and reports cases, and in conclusion calls attention to some of the more important signs of adherent chronic pericarditis as follows:

1. A systolic retraction in the region of the apex. 2. The sign described by Broadbent, which is a distinct systolic retraction of the chest wall in the region of the eleventh and twelfth ribs on the left side. 3. Friedreich's sign, a collapse of the cervical veins during diastole, and, according to Kussmaul, a swelling of the cervical veins during inspiration. 4. The pulsus paradoxus is significant of adherent pericarditis or rather of the dilatation which follows. The pulse becomes small and feeble during inspiration, due to traction on the adhesions during the inspiratory expansion of the lungs. As these bands are drawn on it causes a constriction of the vessels of the mediastinum; thus resulting in a small, feeble pulse wave during inspiration.

24. **Gastric Acidity.**—Benedict discusses the various methods of gastric analysis for acids and remarks that it makes comparatively little difference which of the several indicators is used, provided one understands that the results are approximate and reliable only for comparative purposes. With low hydrochloric acid and high fermentation, the readings of the burette are very inaccurate, although they indicate the therapeutic principles clearly enough. For accurate tests the chyme must be incinerated.

25. **Hydrotherapy.**—The various methods of hydrotherapy are noted by Baker, who gives the results of their employment in certain cases of mental disorder in the Morris Plains asylum. He has found the wet pack at 65 F., or the full bath at 95 to 105 F., very useful in excited cases and in insomnia, and at present has a case under treatment with mild excitement and confusion in which the wet pack seems almost to restore the normal condition. The improvement appears to be progressive. He has employed hydrotherapy in 26 cases of melancholia, with or without agitation, dementia præcox, hysteria, puerperal insanity, characterized by depression and slowness of thought, painful delusions, etc., lack of nervous and muscle tone, sluggish circulation, anorexia, loss of weight, greasy, acne-covered skin, intestinal fermentation and constipation. In these cases he has used ablutions and wet packs with advantage, continuing for various periods according to the case, with decidedly good results, improvement in the physical condition, quieting of the agitation, gradual disappearance of delusions and of the prior mental state together with physical improvement. He thinks the methods valuable adjuncts to hygienic and medicinal measures.

## Boston Medical and Surgical Journal.

*March 31.*

26 *Blood-pressure Observations in Surgical Cases, Report of the Committee on Research for the Division of Surgery, Harvard Medical School, January, 1904. Wm. H. Prentiss, James B. Stone and Fred T. Murphy.

26. **Blood Pressure in Surgery.**—This, as its title indicates, is a composite article. The general results are summarized by the Committee on Surgical Research. Three questions were considered worthy of investigation: 1. Does the Riva-Rocci apparatus indicate the true blood pressure with sufficient accuracy for clinical purposes? 2. In what cases and under what circumstances are the errors due to the apparatus so great as to invalidate its advantageous use? 3. What is the value of blood-pressure observations under the following heads: *a*, as an indication for or against operation; *b*, during the course of an operation; *c*, in after-treatment of surgical cases? The first and second questions are discussed together and the summing up is given as follows:

1. The inaccurate readings obtained in cases of arteriosclerosis and excessive muscular development are partially obviated by the use of a 10 cm. armlet with the Riva-Rocci apparatus.

2. The presence of dyspnœa causes inaccuracy in the blood-pressure determinations with either a broader or narrow band.

3. Change of posture invalidates the readings obtained with either form of apparatus.

4. Emotional individuals and children show fluctuations of the blood-pressure out of all relation to the actual condition of the patient.

5. Under other circumstances than those above recorded, the accuracy of the determinations with the Riva-Rocci apparatus appears to be sufficient for clinical purposes.

As regards the point *a* in the third question, the committee concluded that graphic determination of the blood pressure by means of the Riva-Rocci instrument may be an indication for or against the operation only after considering all the conditions which enter into the determination of blood pressure in any individual case, and like the symptom of leucocy-

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tosis, an estimate of the blood pressure may help to determine for or against operation in an individual case in connection with other symptoms. The cases in which it appears to offer the greatest promise are those in which the element of shock and of cerebral compression are present. As to its value in the course of operation, they remark that a change in the position of the patient is likely to cause a change of the blood pressure so great as to negative its value, and anesthesia may also affect it. The results of salt solution infusion and subcutaneous stimulation may be determined in some cases by means of the apparatus. Ordinarily, however, the condition of the patient as judged by the ordinary physical signs is better than blood-pressure reading on which to base an estimate of the physical condition. In the after-treatment of surgical cases, the number of observations made was comparatively few. They noticed a marked and rapid drop in the blood pressure shortly before death, occurring with equal regularity in cases of shock, fractures of the base, general peritonitis and sepsis. This "moribund drop" made its appearance at varying intervals before death, but in no case was there any doubt as to the prognosis from general physical signs. When recovery followed operation, except for the results of stimulation, no data of value in the after-treatment of the cases were obtained. The general conclusion is that the value of the Riva-Rocci apparatus in blood-pressure determination in surgical cases is limited to a small number of cases, chiefly those of cerebral compression and surgical shock. When these conditions are present and other confusing causes are eliminated, the value of the blood pressure as an indication for or against operation is increased. Under other circumstances the value of these observations is at present not apparent. They conclude that the use of blood-pressure tests as a routine practice is not necessary.

### Cincinnati Lancet-Clinic.

*March 26.*

27 Histologic Structure of the Placenta. James W. Rowe.
28 *The Mechanics of Labor in a Peculiar Form of Dystocia. W. D. Porter.
29 Address of the Retiring President. Byron Stanton.
30 Address. Academy of Medicine of Cincinnati. S. P. Kramer.

28. **Peculiar Form of Dystocia.**—The special condition here described has been observed by Porter in about a dozen cases in the last ten years, and always in primiparæ. The condition may be described, he says, as follows: At an interval, varying from a few days to several weeks in advance of labor, the head is found well down in the pelvis. In some instances it almost rests on the pelvic floor. The cervical canal is obliterated and the lower uterine zone envelops the head. The external os can be felt like a dimple, firmly contracted. The uterine tissue surrounding the presenting part is so thin that the configuration of the head can be readily made out by the examining fingers. So thin is the tissue that sutures and fontanelles are easily outlined. The tyro might easily be deceived into believing that dilatation was complete, and that only the membrane separated his finger from the scalp. The condition of the cervix and lower zone is practically that which obtains in normal labor when it has advanced to the point at which the external os begins to dilate. The head occupies a much lower position than is usual at this point in labor. The condition, he thinks, is doubtless due to the necessity of economizing space. The firm abdominal walls force the fetus into the pelvis, and cause obliteration of the cervical canal and stretching and thinning the tissues of the lower zone. While it would appear that a speedy and easy labor should supervene, a tedious labor will almost certainly follow and the risks of bladder injury and septic infection are increased. The active factors in dilatation of the cervix are involved in peculiar difficulties. The lower uterine segment envelops the head, fitting snugly like a skull-cap, and this grasp is only accentuated by uterine contractions preventing distension of the membranes with water in advance of the head. The pains are nagging and ineffective. Artificial dilatation, he remarks, is the proper treatment. It should be employed early and is easy on account of the thinness of the cervical tissue, but this is apt to become caught between the head and the symphysis during the second stage. It can be pushed up, but descends again. The whole of the uterus is too low and unusual care is necessary to prevent tearing. The low position of the uterus also insures an abnormally low position of the bladder, exposing it to increased danger of trauma, and care should be taken to keep the bladder practically empty. In case the second stage is very difficult, considerable bruising of the bladder wall is inevitable.

### St. Louis Medical Review.

*March 26.*

31 Report of Committee on Public Health and Legislation, to St. Louis Medical Society.
32 My Autobiography and Reminiscences. (Continued.) S. Pollak.

### Medical Record, New York.

*March 26.*

33 *Is Iodid of Potassium a Specific in Lobar Pneumonia? A Preliminary Report. H. Altshul.
34 Report of a Case of Kidney Decapsulation, with Some Observations on the Operation. A. G. Gruetzell.
35 Cases of Urethral Stricture and Their Management. James Pedersen.
36 *Some Observations While Serving in the Philippines. J. A. Guthrie.
37 *Value of Total and Differential Leucocyte Counts During the Course of Typhoid Fever. Henry A. Bigler.
38 *A New Sign of Basilar Meningitis. G. W. Squires.

33. **Iodid of Potassium in Pneumonia.**—Altshul claims that he has not had a death in twelve years out of 62 cases of pneumonia treated with iodid of potassium, and thinks that the action of the drug is directly antagonistic to the disease. The method of treatment is to give an initial dose of at least 10 to 15 grains, increasing it by 5 to 10 grains every two or three hours day and night, according to the severity of the case, until defervescence is well established. However soft the pulse may become the dose is kept up, the guide being the regularity of the heart, as determined not by the pulse alone, but by auscultation of the heart itself and the character of the heart sounds, especially the second pulmonic. If this be clear and distinct, we are accomplishing what is desired. If there is irregularity in the heart itself, strychnin in the dose of 1/60 to 1/40 gr. every four or six hours is given until the heart becomes regular. In this manner he has in a large number of cases given 1,000 to 1,500 grains of the iodid in a 50 per cent. solution, in milk, per day, and in one case as high as 1,900 grains. Dr. H. T. Prentiss of Holyoke, Mass., reported to him a case in which he gave 3,000 grains daily for about four days, and to another patient, a child, he gave 2,160 grains daily for two days with no signs of intolerance, and recovery in both cases. At the commencement there may be a slight coryza, but this disappears as the dose is increased. He insists on the importance of the condition of the heart during this treatment, and believes that failures are due to faulty methods and lack of courage.

36. **Tropical Hygiene.**—Guthrie thinks that there is too much germophobia in the tropics and that the microscope may be over-used. The sun's rays exert more influence in the Philippines than in any other tropical country, because the whites there have not yet learned to accommodate themselves to their environment. They do not dress properly nor bathe sufficiently to keep the skin in good order. Besides the sun's rays there are other agencies such as insects in choice assortments; there is in reserve an array of living things to prey upon the poor alien's depleted cuticle. Insects not only expend their poisons through stings, but there is another easy avenue, that is, the vile habit of "tuba" drinking. Tuba is obtained by tapping the blossom stalk of the cocoanut tree, allowing the sap to drop into a joint of bamboo for days. In the meanwhile every kind of insect gets into it. Though they may be drained out afterwards, there remains in liquid form a strong essence of bug. This, he thinks, is the main reason why it is so poisonous. Another alcoholic poison is "bino," against which he warns Americans. This may be any kind of doctored fluid, but is very apt to contain wood alcohol. It may safely be said that alcohol is not a necessity in any part of the tropics, but if one is addicted to it, he should confine himself to the best that is to be had, and should never drink before the midday meal. In fact, drinking should be regulated by a competent physician in any case. To live properly, dieting one's self, keeping down the deposit of uric acid with plain food is best.

Rest between the hours of 11 and 3 is essential, avoiding the sun, keeping the body cool by frequent bathing; lemon and lime juice in water is much more wholesome than alcohol. When the tissues become lax, as shown in many cases of dilatation of the stomach and dropsical effusion of the lower limbs, it is time to take two or three months' vacation and go to a cooler climate. The wearing of a flannel band day and night is not a necessity but a habit. He thinks, however, that the abdomen should be protected while sleeping. The water supply is the one thing where care is imperative, the drinking of distilled water if possible, and having the clothing washed in the same, or boiled. He advises against eating food handled by natives, not that he wishes to criticise the Filipinos' personal habits, but that he thinks their hands are not microscopically clean. Americans there should disinfect their hands by occasional ablution in a 0.1 per cent. solution of bichlorid, and he warned against the practice of scratching, keeping the hands away from the face and hair as much as possible. Scrupulous care of the teeth is another important matter, and afterwards he would rinse the mouth and gargle the throat with warm Dobell's solution, allowing some of the warm solution to be snuffed up and flow past the posterior nares without swallowing. By adopting these habits of microscopic cleanliness, he thinks that the chances of contracting disease would be reduced to a minimum. He remarks in conclusion that Americans are beginning to learn how to live in the Philippines and he is pleased to observe it. He suggests that his plan of cooling buildings with refrigerating stoves be tried if only as an experiment.

37. Leucocytosis in Typhoid.—The characteristic typhoid leucocytosis, such as reduction in the total number with a relative increase of large mononuclears and a relative decrease of polymorphonuclears should be watched, Higley thinks, in this disease. So long as the typhoid infection remains pure the characteristics of the total and differential leucocyte counts peculiar to this disease are maintained, but they are altered in case of complicating infections. Therefore, frequent and careful, total and differential leucocyte counts may be of great value in enabling the physician to keep in touch with the variations in any given case.

38. New Sign of Basilar Meningitis.—The sign which Squires has found to be invariably present in this disease, frequently as early as the fourth or fifth day, according to the severity of the attack, is a rhythmical dilatation and contraction of the pupil. The method of obtaining the sign is as follows:

> Place the child's head between the knees of the physician, face upward, with the body of the child supported on the bed, table, or lap of the nurse. Grasp the sides of the child's head with each hand and produce gradual and forcible extension of the head on the spinal column. As the head is brought back in this extension the pupils will be seen to commence to dilate simultaneously with the commencement of extension, the more extreme the extension the more the dilatation. Now on flexion the pupils contract so that when the chin is forcibly brought to the manubrium the pupils are well closed up. This can be done several times a minute, and each time the pupillary phenomenon will be repeated. The dilated pupils, with extreme retraction of the head in the late stages of the disease, may be in some measure mechanical or hydrostatic from increased pressure by effusion on the nerve roots or centers at the base of the brain. An early recognition and treatment of this disease is very important, if we would hope to save many of our little patients.

### Northwestern Lancet, Minneapolis.

*March 15.*

39 *Physical and Chemical Forces in Vital Operations. Charles F. Dight.
40 Some Local Tuberculoses. J. Clark Stewart.
41 *A Note on Primary Ether Anesthesia for Short Operations—Pleasant, Safe and Efficient. Edward J. Brown.

39. Vitality.—Dight concludes that aside from the processes by which the living cells build lifeless food material up into living protoplasm and the facts of reproduction, the physical and chemical forces explain the vital phenomena. The difference, however, between living and dead matter is so far unbridged, and the possibilities of germ cells can not be explained by chemistry.

41. Primary Ether Anesthesia.—Brown has used primary ether anesthesia in operations on the throat and nose since last June in 21 different patients, mostly young children. He administered the ether by the drop method with the ordinary chloroform mask, using from 8 to 10 grams in from one and a half to two minutes; in most cases following one or two applications of 20 per cent. cocain. In a few of the later cases, including the removal of adenoids in four-year old twins in his own family, the cocain was omitted without apparent disadvantage. He finds that children take ether without objection, breathing deeply with the mouth open, and vomiting has not occurred nor undue hemorrhage. He considers the method pleasant, safe and efficient.

### American Journal of the Medical Sciences, Philadelphia.

*March.*

42 *Perineal Zoster with Notes on Cutaneous Segmentation Postaxial to the Lower Limb. Harvey Cushing.
43 *Late Effects of Typhoid Fever on the Heart and Vessels. W. S. Thayer.
44 Multiple Sarcoma. Thomas A. Clayton.
45 Tuberculous Stricture of the Ascending Colon, with Sudden Total Obstruction of the Bowel; Perforation of the Intestine; Removal of the Cecum and Half the Ascending Colon; Recovery. Thomas S. Cullen.
46 *Study of Normal and Pathological Conditions of the Bursæ of the Neck, with Special Reference to the Subhyoid Bursa. Willis S. Anderson.
47 *Hemolymph Nodes. Hughes Dayton.
48 Syphilitic Affections of the Skin and Osseous System in the Newborn. W. Reynolds Wilson.
49 *Study of the Caloric Needs of Premature Infants. John L. Morse.
50 *Experimental Study of the Relation of Coils with Eosinophilic Organization to Infection with an Animal Parasite (Trichina spiralis). Eugene L. Opie.
51 Brain Tumor Involving the Superior Parietal Convolution; Two Operations for Its Removal; Partial Success, with Some Relief of Symptoms; Death Two Years Later; Autopsy. Theodore Diller.
52 Congenital Cysts of the Fourth Ventricle. Report of Two Cases Associated with Tumor of the Optic Thalamus and Cruz Cerebri. J. Ramsay Hunt.
53 Case of Accidental Poisoning by an Unknown Quantity of Atropin Sulphate; Recovery. Samuel Stalberg.
54 Three Cases of Pernicious Anæmia with Description of the Pathologic Changes Found in the Spinal Cord. Robert Bolling.
55 A Human Embryonic Vesicle Showing Early Placenta Formation. John M. Swan.

42. Perineal Zoster.—Cushing reports two cases from which, as a text, he discusses the general subject of nerve distribution from the lower portion of the cord and its termination. The article is not capable of being abstracted in sufficient detail to do it justice, and would also require the reproduction of many of the illustrations.

43. Typhoid Fever.—Thayer's conclusions, in brief, from a study of 183 cases of individuals who have had typhoid, are as follows: 1. The average systolic blood pressure in these old typhoids was appreciably higher than in the control observations of healthy individuals. 2. The higher average of the blood pressure was constant in every decade. 3. In many instances among them the blood pressure exceeded appreciably the limits ordinarily expected. 4. The radial arteries were palpable in a proportion nearly three times as great as was found to be the case in supposedly healthy individuals who had never had the disease. 5. The average size of the heart was greater than at the time of their first appearance at the Johns Hopkins Hospital, with typhoid fever. 6. Cardiac murmurs were considerably more frequent among old typhoids and in the same cases during attacks. 7. In 8 cases where the heart was considered normal on discharge from the hospital, subsequent examination revealed hypertrophy with mitral insufficiency. One case showed a possible mitral stenosis, one aortic insufficiency, one general arteriosclerosis with hypertension. 8. In one case the aortic diastolic murmur was present four months after discharge, but disappeared later. 9. Patients whose pulse was very irregular during the disease showed on the average a higher blood pressure than others. In other respects their condition was very little different. 10. In cases where the systolic murmur at the apex was observed during the attack, showed later an increase in the blood pressure and in the size of the heart, as compared both with the mean of observations made on the same cases on admission and with the general average for the old typhoids. Nearly one-quarter of the cases in which during the attack systolic apical murmurs were detected, showed later evidence of organic heart disease. Indeed the majority of all the organic lesions among the 183 old typhoids were found among these 31 cases. Thayer remarks that these figures are not as adequate as a larger series would be, but he thinks that they

indicate that the disease is an active factor in the etiology of a considerable number of heart lesions later in life.

**46. Bursae of the Neck.**—The history of these formations is reviewed by Anderson, as are also their symptoms. The cases he has observed were in females, but he thinks their sensitiveness to the deformity may be the cause of their having revealed it. Both cases are reported in detail, and others from the literature are briefly abstracted. As regards treatment he remarks that there is little hope from internal medication. The local use of absorbents or irritants seldom does good. Sometimes, as in one case reported by the author, the cyst disappeared without treatment. No irritating local applications should be used as fistula has followed such. Simple incision with drainage is of no value; if it closes, recurrence follows; if it remains open, fistula is produced. Drainage of the sac and use of local absorbents to produce closure has been tried successfully in some cases. Failures are also reported, and in some with a chronic suppurating fistula as the result. When it is recalled that the sac normally extends up beyond the hyoid bone, narrowing as it ascends, and is usually prolonged downward to an infundibuliform prolongation, it is easy to understand why it can not be readily obliterated. Incision and cauterization have been tried and good results reported. Solutions of iodin, carbolic acid, etc., to excite inflammation have been used with varying results. Panas cured a case by the injection of chlorid of zinc solution into the sac without evacuation. Partial extirpation of the cyst is unsatisfactory and not advisable. Complete extirpation of the cyst is by far the most satisfactory method. Difficulty has often been experienced in dissecting it out entirely. Weir's method of injecting the sac with melted paraffin and allowing it to harden before dissection is an excellent method, and allows the cyst to be shelled out entire.

**47. Hemolymph Nodes.**—From a study of the subject and experimental work Dayton concludes that both histologic and experimental evidence indicate the existence of hemolymph nodes as organs *sui generis*. The chief practical point is to recognize the capability for phagocytic destruction of red blood cells which is possessed to a high degree by certain lymph structures, rather than to dwell on the individuality of the hemolymph node. The occurrence of transition forms from the node containing blood sinuses only to that with sinuses containing only hemolymph, renders a strict classification impossible. For practical purposes Warthin's grouping of all varieties under the heading of hemolymph nodes seems satisfactory.

**49. Premature Infants.**—Morse has studied the subjects of the caloric needs of prematurely born children, and illustrates his paper with diagrams and temperature curves. The conclusion which he reaches is that the caloric need of premature infants is relatively greater than that of full-term children. In part this is due to the small size and the comparatively large surface area of premature infants, from which they lose heat faster than do the full-term children, and partially to the incomplete development of their digestive power, utilizing a smaller portion of caloric value of the food. He emphasizes the importance of protecting premature infants against loss of heat and providing for them food which shall throw the least work on their imperfectly developed digestive organs.

**50. Eosinophiles in Parasitic Infection.**—Opie has experimented on guinea-pigs with an injection of *Trichina spiralis*, and finds that it causes an increase of eosinophiles in the blood comparable to that which accompanies human infection. There is no constant alteration in the number of cells until the end of the second week after the infection, when their relative and absolute number rapidly increases and reaches a maximum at the end of the third week. At this time embryonic trichinæ are being transmitted from the intestinal mucosa by way of the lymph vessels and blood through the lungs to the muscles. Eosinophile cells accumulate in the mesenteric lymph glands and lungs, forming foci which resemble small abscesses in which polynuclear leucocytes are replaced by eosinophile cells. There are also characteristic changes in the bone marrow. The fat is diminished and cellular elements replace it, and the eosinophiles are present in immense number. The eosinophile myelocytes peculiar to the bone marrow are especially numerous; the number of eosinophile leucocytes in the blood always diminishes before death so that the proportion usually becomes less than 1 per cent. Infection with a very large number of trichinæ causes a rapid diminution of the number of eosinophile leucocytes and is quickly fatal. Mild infection stimulates them to active multiplication, but severe infection causes their destruction.

### Critic and Guide, New York.
*March.*

56 *What Can We Accomplish in Cases of Laryngeal Tuberculosis? W. Freudenthal.
57 *The Relation of the General Practitioner to Eye-strain in His Patients. S. Solis-Cohen.

**56. Laryngeal Tuberculosis.**—Freudenthal remarks in regard to his having previously called attention to a pre-tuberculous laryngitis, which may be either anemic or hyperemic. In the anemic stage he uses insufflations of zinc-sozoiodol with sugar-of-milk, 3 per cent. nitrate of silver applications, liquor ferri sesquichlor (1 to 30), and balsam of Peru. He avoids astringents and caustics as they might produce more effects than desired. In the hyperemic stage he has had good results with a solution of 5 parts creosote; spirits of wine, 10, and glycerin, 50. Applications of tannin, alum and other astringents have been used with benefit. Once laryngeal tuberculosis is established the prognosis is considered absolutely bad by some, but with this he disagrees. He has seen some cases recover, and this depends on the character of the pulmonary trouble. If there are simple infiltrations with no symptoms but hoarseness, the best plan is to treat the pulmonary disease and leave the larynx alone, but if the tissue is broken down and ulcerations appear, two drugs have given him special satisfaction: the first is anesthesin (Ritsert), and the second orthoform. With ulcerations or denuded surfaces he gives the patient 1.5 to 3 grains of anesthesin, or even more with sugar, several times daily, without any water. They often give the patient great relief. In most cases, however, topical applications are necessary, and he has used orthoform, pure or in emulsion, with menthol, which goes under the name of Freudenthal's emulsion, and is an excellent anodyne when we can reach the ulcer. Astringents may be combined with the orthoform. In cases of ulcers he has found lubricating the esophagus with oil before the taking of food of value. He has given olive oil for the purpose, but its taste is an objection. The last year or so he has used as a curative measure high frequency currents, applying a curved electrode directly to the larynx. The application is not difficult or dangerous, and not even unpleasant if one is careful. He will publish his experience with this method more fully in another place.

**57. Eye-Strain.**—Solis-Cohen calls attention to the importance of eye-strain, and especially to the work of Gould in this regard.

### Medical Sentinel, Portland, Ore.
*March.*

58 Brain Injuries. Walter T. Williamson.
59 *Treatment and Prognosis of Tubercular Phthisis in Idaho. M. M. Harshbarger.
60 Report of an Interesting Pylorectomy, Also a Nephrectomy and a Prostatectomy. A. C. Behle.

**59. Tuberculosis in Idaho.**—Harshbarger holds that Idaho has an ideal climate and altitude for the successful treatment of tuberculous disease. Creosote is the most satisfactory drug for treatment, but cinnamate of soda is a valuable adjunct and possibly superior. He holds that the laity should be educated as to the contagion, and also that consumption in its incipiency is a curable disorder.

### Annals of Gynecology and Pediatry, Boston.
*March.*

61 An Account of the Work, Including Obstetrical Technic, at the Lying-in Hospital of the City of New York. Charles H. Bradley.
62 *Formation and Resolution of Peritoneal Adhesions and Exudates. Horace G. Wetherell.

**62. Peritoneal Adhesions.**—Wetherell concludes from his study of cases that peritoneal adhesions and exudates are essentially conservative, and that with rare exceptions when the source of irritation or infection which causes them is removed, they will be taken up and disposed of. That tympanites,

through increasing the intra-abdominal pressure without peristalsis, and even so-called intestinal paralysis are means to the same conservative end. We should avoid combating these during the acute stage of disease by untimely operation or the giving of food or cathartics. That ordinarily an interval operation will be required for the removal of the source of infection in order to restore the patient to health and insure immunity from relapses; such an operation in skilled hands is many times safer than the let-alone policy. Of course, this does not apply to severe peritoneal infection of perforative origin, for which prompt operation is required.

**Interstate Medical Journal, St. Louis.**
*March.*

63 *Anatomical and Clinical Study of 200 Postmortem Specimens of Prostatic Hypertrophy. (Preliminary Report.) Wiley Broome.
64 Radiotherapy in Treatment of Acne Vulgaris. (To be continued.) Martin F. Engman.
65 Case of Abdominal Aneurism. W. J. Calvert.

**63. Prostatic Hypertrophy.**—Broome's article points out the lack of a general consensus of opinion in regard to the etiology of the condition, and the fallacy of holding that prostatic enlargement is the origin of urinary obstruction in all cases. He reports a case where the largest possible prostate was found without any symptoms whatever. He quotes Senn's statement that the size of the prostate is no criterion as to the indications of necessity for operation. He promises a fuller paper on the subject in a future number.

**Dominion Medical Monthly, Toronto.**
*March.*

66 *Ventrofixation of the Uterus with Subsequent Normal Deliveries. A. Lapthorn Smith.
67 A Medical Medley. J. S. Sprague.
68 Report of a Case of Scald. Everett S. Hicks.

**66. Ventrofixation.**—Smith believes that the evil effects of ventrofixations in subsequent pregnancy are due to the faulty manner in which they have been performed, namely, the uterus being put upside down forward, and fastened there with its back to the abdominal wall, so that the cervix pointed toward the liver. Properly, the anterior surface of the fundus should be scarified and attached to the abdominal wall just above the pubis. If this were invariably done we should hear no more of abnormal labors after ventrofixation. He has performed the operation nearly 250 times, and with almost invariably satisfactory results.

**Western Medical Review, Lincoln.**
*March 25.*

69 *The Objections to Chloroform. W. O. Henry.
70 Observations on Obstetrics in General Practice. J. F. McNulty.
71 Some of the More Common Forms of Hernia. B. B. Davis.
72 Optic Neuritis. S. E. Cook.
73 *Exophthalmic Goiter. LeRoy Crummer.
74 Extra-uterine Pregnancy. John P. Lord.

**69. Chloroform.**—Henry has had an unfortunate case of death from chloroform in a patient on whom he was about to perform a uterine operation. He reviews the subject and opinions, and concludes that chloroform is a dangerous anesthetic, much more so than ether; except in serious lung and kidney trouble, chloroform should not be given unless ether and A. C. E. mixture are contraindicated. He says all hospitals should be provided with nitrous oxid gas for short operations or to precede the ether, and the latter should be administered by the drop method.

**73. Exophthalmic Goiter.**—Crummer reports two cases, and thinks we can conclude from them as to the danger of the use of iodin in simple goiter, and, further, that there is reasonable hope of aid in the use of the antithyroid specific form of treatment in exophthalmic goiter. Every case of persistent rapid heart, especially in women and young girls, should be considered as possibly due to Graves' disease and be properly treated. One of his patients was put on the Lanz treatment, taking the milk of dethyroidized goats, and was greatly benefited. (See abstract of Lanz's article in THE JOURNAL, xl, p. 689.)

**Pediatrics, New York.**
*February.*

75 *Tetanus and Vaccine Virus. John H. Huddleston.
76 Cerebral Palsy of Childhood. M. L. Graves.
77 *Hare-lip and Its Treatment. Charles R. L. Putnam.
78 *Speech Defects in Relation to Mentally Deficient Children. Henry Ashby.
79 *The Fatality of Whooping Cough. Eliza H. Root.
80 Report of a Case of Favus of Scrotum, Co-existing with Ringworm of the Thigh, Giving Identical Trichophyton-like Cultures. A. D. Mewborn.

75.—This article has appeared elsewhere. See THE JOURNAL of January 9, ¶61, p. 128.

**77. Hare-Lip Operations.**—The important points in hare-lip operations, as enumerated by Putnam, are as follows: To cleanse the nostrils carefully with boric acid and sterile water, also the lips and mouth. Etherize the patient but lightly, so that the coughing reflex will prevent blood inhalation. Free the lips and cheeks thoroughly so as to take all tension from the intended line of sutures. Control the coronary arteries with the fingers; cut flaps; put stitches in the mucous membrane, to be tied later; put "principal" suture well back from the edges of the wound, and do not tie it too tightly. Approximate the edges carefully with superficial sutures; wash out the stomach for blood and dry the wound and dust with aristol. In case of double hare-lip he would advise against immediate nursing as the result is always somewhat injured by the procedure.

**78. Speech Defects.**—In considering the cause of speech defects we should note how far they are the result of disease or mal-development in the mouth, nose and pharynx and nasal cavity from chronic catarrh, or in the worst cases by adenoids. The nasal obstruction, if considerable, interferes with the escape of air through the nose in articulating the letters M and N, and so on. The most important defect in the mouth cavity is a deficient or cleft palate, but we have others such as tongue-tie, large tongue, long tongue, thick tongue, etc. In certain Mongolian idiots and cretins enlarged tongue exists, but it is doubtful whether it has much to do with the delay in speech. Tongue-tie is not very important. If the child can protrude its tongue so that the tip passes over the lower lip and can pronounce words beginning with L, its tongue is free enough. The V-shaped palates have been regarded as the cause of defective speech. They are often associated with more or less nasal obstruction, the posterior openings being narrow or blocked with adenoids. There are some few cases where the high palate is associated with speech suggesting cleft palate, indistinct and of a nasal twang. He thinks it would not be surprising to find that it had some effect when we consider how much trouble children operated on for cleft palate experience in acquiring normal speech. Possibly in such cases the soft palate acts imperfectly in shutting off the cavity of the pharynx from the nasal cavity, but it is more likely to be an imperfect innervation than a speech defect. The two most important questions in examining a child who fails to talk at three years or over is, first, is the child deaf; second, what is its mental status as compared with other children of the same age. Oral deformities are hardly likely to explain failure to talk, though long-continued ill health or some recent illness will have to be considered. The detection of deafness is not always easy, and parents are constantly deceived. A child may hear loud noises and yet be unable to distinguish words. As the child becomes older and more intelligent the difficulty is less. Some feeble-minded or abnormal children will absolutely refuse to answer questions, though it is clear that they hear the sound. In other abnormal children the attention is defective. Cases of so-called congenital aphasia are not altogether rare, though such children are not often of normal intelligence. It is rare, Ashby thinks, that some defect or mental feebleness does not accompany the failure to talk. The chief defects met with in ordinary children are articulation defects varying from the mispronunciation of a few consonants to an almost unintelligible mumble. The term "lalling" is sometimes used to include these defects. Marked lalling in children of six years or more is nearly always associated with some subnormal intellectual power, though the latter may be present without any speech defects whatever. He notices the development of infants, and calls attention to the fact that defective children are generally clumsy in other movements, as in swallowing. The first thing in the treatment is to test the hearing, examine the mouth, nose and throat, and estimate the

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child's mental powers. Often the nature of the defect of articulation may be decided by means of the physiologic alphabet, using the names of common objects familiar to the child, besides scamping and transposing consonants. A thick, indistinct utterance is very common, and whispering is not uncommon. Breathing exercises, he thinks, are of much value in conjunction with other physical exercises in these cases. Singing or vocal exercises of the larynx are likely to be useful. Much will depend, of course, on the child's intelligence and perseverance.

79. **Whooping Cough.**—The statistics of whooping cough, as based on the mortality returns in the principal cities and elsewhere, are noticed by Root, who points out that whooping cough is as much to be dreaded as a fatal disease as scarlet fever, and may not leave the patient in as good a condition as before. Sometimes severe disturbances of the nervous system remain. She believes that whooping cough should be under the control of the authorities and subject to quarantine as much as scarlet fever. It is less individually contagious, is not carried by one patient to another as far as known, and its control need not be as complicated and far-reaching as that of scarlet fever, but it is imperative, she holds, that whooping cough should be isolated and controlled.

### Virginia Medical Semi-Monthly, Richmond.

*March 11.*

81 Nine Cases of Resection of the Intestine. Geo. Tully Vaughan.
82 Description of a Curious Case of Malformation—Child Born with Heart Outside Its Body. J. Gates Good.
83 Jottings from a Practitioner's Notebook About Gonorrhea and Rheumatism. Geo. F. Bowers.
84 Some Clinical Observations on the Prophylaxis Treatment of Uric Acid Conditions. J. C. Walker.
85 *Typhoid Gangrene of Lower Extremities—134 Cases of Spontaneous and Surgical Amputations—A Historical Résumé. R. Merrill Ricketts.
86 Early Operation for Appendicitis from a Pathologic Standpoint Verified. J. G. Carpenter.
87 Turpentine in Surgery. W. K. Gatewood.

85.—This article has appeared elsewhere. See THE JOURNAL of January 23, 1904, p. 270.

### Wisconsin Medical Journal, Milwaukee.

*March.*

88 Spina Bifida. H. Reineking.
89 The Depurative Function. Robert C. Brown.
90 Surgical Progress. W. H. Earles.
91 Myomectomy of Uterine Fibroids. A. J. Puls.
92 Infant Feeding. Bertha E. Thomson.

### Medical Fortnightly, St. Louis.

*March 15.*

93 Distal Termination of Complete Duplicate Ureters. Byron Robinson.
94 Radium: Its Possibilities in Medicine. M. V. Ball.
95 Decortication and Nephropexy for the Relief of Nephritis and for the Purpose of Anchoring a Floating Kidney. R. F. Amyx.

### The Post-Graduate, New York.

*March.*

96 Some Valvular Lesions of the Heart. Presentation of a Case. C. F. Wainwright.
97 Proper Treatment of Inevitable Abortion in View of Its Relation to Uterine Disease. George G. Ward, Jr.
98 Arteriosclerosis—Angiosclerosis. Thomas E. Satterthwaite.
99 Notes of Some Cases Seen in the Autopsy Room of the New York Post-Graduate Hospital. Robert H. Halsey.
100 Record of 125 Consecutive Cases of the Analyses of Urine in Ether Anesthesia. Arthur F. Chace.

### Woman's Medical Journal, Toledo.

*February.*

102 Filaria. (Concluded.) Mary M. S. Johnstone.

### Journal of Comparative Neurology and Psychology, Granville, Ohio.

*March.*

103 Relation of the Motor Endings on Muscle of the Frog to Neighboring Structures. John G. Wilson.
104 Space Perception of Tortoises. Robert M. Yerkes.
105 Note on the Significance of the Form and Contents of Nucleus in Spinal Ganglion Cells of the Fetal Rat. Shinkishi Hatai.
106 Establishment of Association in Hermit Crabs, Eupagurus Longicarpus. E. G. Spaulding.

### Northwest Medicine, Seattle.

*March.*

107 Leprosy in the Sulu Archipelago. J. W. Ameuse.
108 Abdominal Contusions. A. E. Bolton.
109 Swedenborg's Vortex-rings and Some of Their Applications in the Realm of Natural Science, with Special Reference to Subject of Thought. E. R. Edson.
110 Tent Treatment of Consumption at the Kings County Hospital. W. P. O'Rourke.

### Atlanta Journal-Record of Medicine.

*March.*

111 Mastoiditis: Causes, Prevention and Treatment. J. M. Crawford.
112 Pneumonia. James B. Baird.
113 Postmortem Findings in Case of Diabetes Mellitus. Wm. C. Pumpelly.
114 Preliminary Report on the Utilization of Plastic Lymph as a Reparatory Tissue in Abdominal Surgery. E. C. Davis.
115 X-ray Treatment of Inoperable Carcinoma of the Breast; Report of a Case. James N. Brawner.

### New York State Journal of Medicine, New York.

*March.*

116 Sewage Disposal as a Means to Purify the Water Supply of the Cities and Towns of the State. Charles B. Tefft.
117 Presentation of a Patient from Whom Was Removed the Superior Maxilla, Left Side, and the Bone Removed. David P. Austin.
118 Etiology and Pathology of Salpingitis. Edward J. Ill.
119 *Surgical Treatment of Salpingitis. H. C. Coe.
120 *Palliative Treatment of Salpingitis. W. Travis Gibb.
121 Suggestions for the Examination of the Presumably Insane. R. H. Hutchings.
122 Review of Some Statistics of Insanity. William Mabon.

119 and 120.—See abstracts in THE JOURNAL, xli, p. 1225.

### Medical Examiner and Practitioner, New York.

*February.*

123 Points on Technic in Routine Examinations of Urine. G. A. de Santos Saxe.
124 Middle Ear Suppuration in Relation to Life Insurance. Wendell C. Phillips.
125 Adenoid Vegetations of the Nasopharynx, Especially Lymphoid Hypertrophies and Their Relation to Life Insurance. C. L. Steenson.
126 Diagnosis and Treatment of Chronic Stone Impaction of the Common Duct. John J. McGrath.
127 Contribution to the Chemistry of Diabetes Mellitus, with Special Reference to Coma and Its Treatment. James H. Reed.

### Proceedings of the Pathologic Society of Philadelphia.

*January.*

128 *Actual and Comparative Resistance of the Acid-fast Bacilli. Randle C. Rosenberger.
129 Report of a Case of Brain Tumor and of a Case of Ruptured Tubal Pregnancy. Moses Behrend.

128.—This article appeared elsewhere. See THE JOURNAL of March 26, 1904, p. 858.

### Pacific Medical Journal, San Francisco.

*March.*

130 Use of the Cystoscope. H. A. Kluesman.
131 Duration of Life After Fatal Injuries. H. D'Arcy Power.
132 Observations on Neurasthenia. Winslow Anderson.

### Albany Medical Annals.

*March.*

133 Discussion on the Character of Milk Supplied to Cities. Production of Sanitary Milk from the Producer's Standpoint. R. A. Pearson.
134 Practical Side of the Question of Milk Supply. Charles Harrington.
135 Contamination of Milk. Rowland G. Freeman.

### Medical Age, Detroit.

*March 10.*

136 Contracted Kidney and Its Clinical Significance. Walter L. Bierring.
137 Syphilis in Children. William Wormley.
138 Work and Worth of the General Practitioner. O. S. Chapman.

### American Practitioner and News, Louisville, Ky.

*February 15.*

139 Cystitis in the Female. Charles W. Hibbitt.
140 Acute Articular Rheumatism. R. Lindsay Ireland.
141 Cancer of the Breast. F. W. Samuel.

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## FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

### British Medical Journal, London.

*March 19.*

1 *Treatment of Serous Effusions. James Barr.
2 Some Points in the Treatment of Hemoptysis at a Sanatorium. J. Penn Milton.
3 Two Cases of Lung Disease Treated with the Emanations from Thorium Nitrate. Gordon Sharp.
4 The Therapeutics of Sea Voyages. Martyn Westcott.
5 *Some General Results of Affections of the Nose and Nasopharynx. W. S. Syme.
6 Note on Haemosoxic Sera. Marc Armand Ruffer and M. Crendiropoulo.
7 *Capsule Formation by Diplococcus Pneumoniæ in Culture; Point Possibly of Use for the Identification of that Microorganism in Practice. M. H. Gordon.

8 Pathology and Surgery of Certain Diseases of the Pancreas. A. W. Mayo Robson.

1. **The Treatment of Serous Effusions.**—Barr had a patient who suffered from hydrothorax with cancerous conditions and effusion rapidly reproducing itself, requiring repeated tappings. In order to make life more endurable, he thought it would be well to try the use of adrenalin to lessen the amount of effusion, and after the fifth aspiration, which took place four days after the preceding one, a dram of a 1 in 1,000 solution of adrenalin chlorid was injected. There was no further secretion, and the old lady spent the rest of her life in comfort as far as her chest was concerned. Since then he has used it in a fair number of cases of pleurisy with effusion, invariably with success, using one dram on each occasion. He has since extended this treatment to ascites. The first cases were of hepatic cirrhosis with obstruction, and while the results were not striking, the patients showed no ill effects. In one case some slight collapse was noticed after the injection, but he does not credit it to the adrenalin. Collapse after tapping ascites is not an uncommon event. The next use of the remedy was in a case of pericarditis where 40 minims were injected into the pericardium, with the result of nearly cutting off the circulation of the heart, but the condition was quickly relieved by the injection of 3 minims of a 1 per cent. solution of nitroglycerin and 2 of aqua atrop. sulph. No further tapping was needed. It was evident that in this case the dose was rather too large. Later in the same case a pleural effusion was treated similarly, and it occurred to Barr that in addition to the tapping, if he substituted another fluid, say air, for that which was withdrawn, he might prevent subsequent adhesions. With this object he injected half a pint of sterile air, and it was not all absorbed for at least ten days. He thinks the adhesions were lessened by the injection. Another case of ascites is reported treated by injection of 2 drams of adrenalin chlorid, with the best results, the ascites being apparently completely checked, and four pints of aseptic air were introduced with the adrenalin chlorid. He describes the apparatus which he has devised for the injection of air and adrenalin, consisting essentially of a large Woulfe's bottle, with three openings at the top and an outlet at the bottom, each guarded by a glass stopcock. One opening is in connection with the water reservoir, the second is fitted with a large thistle head filled with cotton wool for filtering the air, the third is the outlet for the aseptic air to be driven into the pleural or peritoneal cavity by allowing the fluid to run in through the reservoir. This apparatus was rather cumbersome, and he has substituted for it a little instrument which a German veterinary surgeon uses for introducing antiseptic air into the udders of cows, fitting a small metallic pump to the apparatus, consisting of a trochar and canula with two arms and a siphon tube, a syringe for injecting the adrenalin and an apparatus for introducing the filtered air. The whole can be boiled, with the exception of the cotton wool filter, and it can be sterilized by heat as often as is necessary. A detailed summary of some of the cases is given. He remarks that the treatment is easily carried out and the apparatus is fairly perfect, but aseptic precautions are necessary. He objects to the use of pure oxygen instead of air, holding that it would be absorbed too quickly, and the injection of air has an advantage in that it prevents collateral hyperemia and edema of the other lung, which sometimes follows the withdrawal of large quantities of fluid.

5. **Nasal and Nasopharyngeal Disease.**—Syme calls attention to the conditions which may follow these local disorders. He thinks it is advisable in cases of chronic illness associated or not with gastric derangement, to include among the possible causes certain affections of the nose and nasopharynx, especially where the discharge is of a mucopurulent or purulent character. Nasal affections, he thinks, in these instances may be possible contributory causes. It is probably some physical weakness which makes the patient more liable to the evil effects of the introduction of purulent matter into the stomach. The nasal treatment, therefore, while necessary, must be looked on as a reinforcement of, rather than an alternative to, other methods.

7. **The Pneumococcus.**—Gordon points out and illustrates the formation of capsule around the pneumococcus in gelatin cultures at 37 C., and thinks that its property of forming such in one day may be applied to the identification of the micro-organisms and their differentiation from the specimens of *Streptococcus pyogenes*.

**The Lancet, London.**

*March 19.*

9 *The Pathology and Surgery of Certain Diseases of the Pancreas. A. W. Mayo Robson.

10 *Chemistry of the Urine in Diseases of the Pancreas. P. J. Cammidge.

11 Acute Appendicitis: Its Diagnosis and the Indications for Operation. William Russell.

12 Early Diagnosis of Acute Intestinal Obstruction. W. Hale White.

13 Case of Eclampsia Treated by the Administration of Chloroform. John F. Jennings.

9. **Pancreatic Disease.**—Robson points out the possibilities of gastric ulcer being associated with disease of the pancreas and invading it by new growth, and changes in the anatomy of the ducts as bearing on the question of producing jaundice and pancreatic disorder. He describes the anatomy of the pancreas, and goes at length into the special symptoms of its disease: the digestive, including steatorrhea and azotorrhea or faulty digestion of albuminous foods, excessive secretion, greasy, pale diarrhea, dyspepsia, alteration of the appetite, emaciation, nausea and vomiting. Among the physical signs are tumor, fever, pain and tenderness, pressure symptoms, such as ascites, owing to the involvement of the portal vein, hemorrhage and jaundice. The metabolic symptoms include diabetes and glycosuria with other changes in the urine, such as indicanuria, though observations show the amount of indican is no guide to the presence or absence of disease. Pentosuria is of greater diagnostic importance. He thinks certain reactions may be obtained from the urine in the greater number of if not in all cases of pancreatic disease, which are a material help in the diagnosis. He thinks it is possible to distinguish between acute and chronic inflammation, simple and malignant disease. Glycosuria does not interfere, but the sugar has first to be removed by fermentation. In this article he does not describe the reaction, but it is given later by Cammidge. Alimentary glycosuria occurring from a partially disordered affection of the pancreas is of some value in the diagnosis and Sahli's symptom of giving iodoform in a capsule hardened by formalin and testing the urine for iodin is also mentioned, and some remarks are made in regard to fat necrosis and hemorrhage. As regards the former, he thinks his cases disprove the statement that it is necessarily of fatal significance. Hemorrhage may be due to vascular disease, injury, fatty degeneration of the gland cells in alcoholism, necrosis in the glands, disintegration of neoplasms, embolism of a pancreatic artery and other causes such as heart and lung disease, hepatic cirrhosis, hemorrhagic diathesis, scurvy, phosphorus poisoning, etc. Pancreatitis may undoubtedly lead to hemorrhage and the symptoms may vary from colic to violent and persistent pain followed by collapse and death. The site of the pain may be precordial or dorsal, but it is usually epigastric. The diagnosis may be obscured at first, but with the onset of pancreatitis some of the symptoms mentioned will be present and the pancreatic reaction in the urine will offer a valuable help. In all the stages the treatment is that of acute pancreatitis.

10. **Pancreatic Reaction.**—In this lecture Cammidge gives the pancreatic reaction mentioned above by Robson. He describes the procedure in which he calls reaction "A" as follows:

The specimen of urine to be examined is filtered, and 10 c.c. of the filtrate are poured into a small flask. One cubic centimeter of strong hydrochloric acid is added and a funnel having been placed in the neck to act as a condenser the flask is placed on a sand bath and gently boiled for ten minutes after the first sign of ebullition is detected. A mixture of 5 c.c. of the filtered urine and 5 c.c. of distilled water is then poured into the flask, which is afterwards cooled in running water. The excess of acid is now neutralized by slowly adding 4 grams of lead carbonate and, after standing for a few minutes to allow of the completion of the reaction, the urine is filtered through a moistened filter paper and the flask is washed out with 5 c.c. of distilled water on to the filter. To the clear filtrate are now added 2 grams of powdered sodium acetate and 0.75 gram of phenylhydrazin hydrochlorate and the mixture is boiled for from three to four minutes on the sand bath. The hot fluid is then poured into a test tube and allowed to cool undisturbed. After the lapse of a period, varying with the

severity of the case from one to 24 hours, a more or less abundant flocculent yellow deposit is found at the bottom of the tube, and this when examined under the microscope with a 1/6-inch objective is seen to consist of sheaves and rosettes of golden yellow crystals. As the presence of sugar in the urine would obviously vitiate the results thus obtained it is necessary before proceeding to the test to make sure that the untreated urine does not give a reaction with phenylhydrazin. This may roughly be done with Fehling's solution, or some similiar test, but it is better to carry out a control experiment with phenylhydrazin hydrochlorate and sodium acetate in the manner I have just described, omitting the preliminary boiling with hydrochloric acid. Should the control experiment reveal even a trace of sugar it must be removed by fermentation, with subsequent boiling to expel the alcohol formed, before the investigation is proceeded with. The presence of albumin in the urine is also liable to cause trouble, and it is best got rid of either by treatment with ammonium sulphate or by acidifying with acetic acid, heating and filtering. The results obtained by this method were found not to be absolutely trustworthy, although a useful aid in diagnosis, since a positive reaction was always obtained in patients suffering from certain other diseases where active tissue change was taking place, such as cancer, adenitis, pneumonia, etc. For a long time the positive reaction given by these non-pancreatic cases diminished the practical usefulness of the test, but eventually a means by which the cases of pancreatitis might be distinguished was devised, and we believe that by combining the results of the two, it is possible in the large majority of cases to make a trustworthy diagnosis from the examination of the urine alone. The differentiating test depends on the fact that the formation of the crystals described in reaction "A" is interfered with in inflammation of the pancreas by a preliminary treatment of the urine with perchlorid of mercury, while such treatment does not affect the appearance of crystals in cases of cancer of the pancreas and the other conditions which give rise to a positive reaction. The procedure, which I shall refer to as the "B" reaction, is as follows: Twenty c.c. of the filtered urine are thoroughly mixed with half its bulk of a saturated solution of perchlorid of mercury. After standing for a few minutes it is carefully filtered and to 10 c.c. of the filtrate 2 c.c. of strong hydrochloric acid is added. The mixture is then boiled for ten minutes on a sand bath and subsequently diluted with 5 c.c. of the filtrate from the mixed urine and perchlorid of mercury solution and 10 c.c. of distilled water. After cooling it is neutralised with 4 grams of lead carbonate and the succeeding stages of the operation are carried out as in reaction "A."

Experiments were then set on foot to still further differentiate the forms of disease, and a careful observation of the crystals isolated from the urines of various types of pancreatic disease showed that while there is a general resemblance, certain variations occurred and the differing rate of solubility of crystals in dilute sulphuric acid was remarked and found to be of still greater value. If the crystals obtained in reaction "A" are observed under the microscope while a 1 in 3 dilution of sulphuric acid is being irrigated under the cover glass, they will be seen to turn brown when the acid reaches them and dissolve. In acute pancreatitis the interval that elapses between the first appearance of the brown color and complete solution varies from a few seconds to half or three-quarters of a minute. In chronic pancreatitis it extends from half to one and a half or rarely to two minutes, while in malignant disease the crystals do not completely disappear until three to six minutes. The practical results of the examination of the urine he summarizes as follows:

1. If no crystals are found by either the "A" or "B" method the pancreas is not at fault and some other explanation of the symptoms ought to be sought. 2. If crystals are obtained by the "A" method, but not by the "B" reaction, active inflammation of the pancreas is present and surgical interference generally indicated. (a) The crystals obtained by the "A" method will in acute inflammation dissolve in 33 per cent. sulphuric acid in about half a minute. (b) In chronic inflammation the crystals obtained by the "A" method will take one or two minutes to disappear. 3. If crystals are found in preparations made by both the "A" and the "B" methods there may be (a) malignant disease of the pancreas, when the crystals will, as a rule, take from three to five minutes to dissolve and operation is inadvisable; (b) a damaged pancreas due to past pancreatitis, when the crystals will dissolve in from one to two minutes; (c) some disease not connected with the pancreas, when the crystals dissolve in about one minute. In the two latter (b and c), the urgency of the symptoms and the condition of the patient must decide the need for an exploratory incision, but there is generally not much difficulty in referring the case to one or other of the groups when the clinical history is considered in conjunction with the result of the examination of the urine.

The microscopic examination of centrifugalized deposit of the urine is also of some use, and he describes the different forms of deposits that are observed, and in the conclusion of his lecture mentions the different observations in the reaction and the dissolving of crystals in more detail.

## Annales de l'Institut Pasteur, Paris.

*Last indexed page 862.*

14 (XVII, No. 11.) *Report of the French Yellow Fever Medical Commission. Marchaux, Salimbeni and Simond.—La fièvre jaune.

15 Etudes sur la clavelée (sheep pox). A. Borrel. Serum treatment.

16 Formation des gites à larves d'anophèles en Algérie. E. Sergent.

17 L'alcool et ses droits naturels. E. Duclaux.

18 (No. 12.) Recherches sur la coagulation du sang (of blood). J. Bordet and O. Gengou (Brussels). See also vol. xviii, No. 1.

19 Le passage du virus rabique à travers les filtres. Remlinger (Constantinople).

20 Anaérobies et symbiose. Bienstock.

21 Etudes d'hydrographie souterraine. E. Duclaux. (Commenced in No. 8.)

22 (XVIII, No. 1.) Etudes expérimentales sur la syphilis. El. Metchnikoff and Em. Roux. (Commenced in No. 12.)

23 *X-Ray Treatment of Alopecia Areata. R. Sabouraud.—Les teignes cryptogamiques et les rayons X.

24 *De la valeur thérapeutique des injections der sérum dans la diphthérie suivant les doses et la voie de pénétration. L. Cruveilhier.

**14. Report of the French Yellow Fever Commission.**—This commission was sent to Brazil by the French government in 1901 and remained there for two years, studying yellow fever with every facility afforded by the Brazilian authorities. Among the conclusions announced as the results of this research is one to the effect that the serum of a yellow fever subject is virulent for three days, but by the fourth day there is no longer any virus to be found in it, even when the fever still persists high. Also that the virus applied to an abrasion of the skin made by scraping off the epidermis is unable to induce the disease, but subcutaneous injection of .5 c.c. imparts it. The virus in the blood serum of a yellow fever patient traverses the F bougie of a Chamberland filter without dilution, but not the B bougie. Virulent serum exposed to the air at a temperature of 24 to 30 C. becomes inactive by the end of forty-eight hours. In defibrinated blood kept under oil of vaselin at this temperature the microbe of yellow fever is still alive after five days, but does not survive to the eighth day. Virulent serum becomes harmless when heated. Preventive injection of this heated serum confers relative immunity, which may be rendered permanent by supplementing it with inoculation of a small amount of virus. Injection of defibrinated blood kept in the laboratory under oil of vaselin for at least eight days confers relative immunity. The serum of convalescents is endowed with unmistakable preventive properties, and seems to possess also therapeutic properties. The immunity conferred by serum from convalescents is still active by the twenty-sixth day. The *Stegomyia fasciata*, after sucking the blood of a yellow fever patient during the first three days of the disease, is not able to transmit the disease until after an interval of twelve days at least. The resulting infection seems to be graver the longer the interval that elapses. The mosquito bite does not always cause the disease, and does not confer immunity. Aside from the bite of this variety of mosquito the disease can be transmitted only by subcutaneous injection of blood taken from a yellow fever subject during the first three days of the disease. There can be no epidemic in the absence of the *Stegomyia*. The period of incubation may last for thirteen days. The causal agent of yellow fever still eludes research.

**23. Treatment of Parasitic Alopecia by the X-Rays.**—Sabouraud gives an illustrated description of the apparatus with which he has succeeded in curing tinea tonsurans in three months instead of the usual eighteen months' course necessary with other methods of treatment. This means an immense saving to the city of Paris, he remarks, as there are about 4,000 endemic cases of tinea and 650 are in the hospitals on account of this affection. The expense of treating them amounts annually to $90,000. This expense will be much lessened by reducing the length of treatment to one-sixth of the former time. He describes the few failures to the overlooking of some patch not discovered until later, or to reinoculation during treatment. In his extensive experience these failures have not amounted to more than 5 or 10 per cent. All the other patients have been permanently cured.

**24. Diphtheria Antitoxin Treament by Various Routes.**—Cruveilhier's experiments were all made on guinea-pigs under similar conditions. They demonstrated that in diphtheria, as in tetanus, after a certain period has elapsed, antitoxin is powerless, however introduced into the system. A single subcutaneous injection of .1 c.c. ten hours after inoculation of the animal with the diphtheria culture saved its life. Injection of 1 c.c. lengthened the safe period by two hours, as also

injection of the smaller amount directly into the brain. In a few instances the period of safety was prolonged to fourteen hours. Intravenous injection proved the most effectual of all. The period of safety was prolonged in every instance to sixteen hours. The intravenous route, therefore, is the best for diphtheria antitoxin. It proved effective in these tests six hours after a subcutaneous injection had lost all efficacy.

### Archives de Neurologie, Paris.
*Last indexed XLI., page 128.*

25 (XXV, July.) Idiotie profonde avec nanisme et infantilisme. Amélioration considérable. Bourneville.
26 (August.) Final History of a Myxœdematous Idiot. Bourneville.—Fin de l'histoire d'un idiot myxœdemateux.
27 Eye Lesions in General Paralysis. F. Keraval and G. Raviart. —Etude de l'état du fond de l'œil chez les paralytiques généraux. Atrophie papillaire et décollement de la rétine.
28 (September.) Obsession et délire. E. Marandon de Montyel (Ville-Evrard).
29 Etude des manifestations individuelles des jeunes choréiques dans la constitution hâte-obsessive. S. Bookinaeff (Moscow).
30 Délire et petit brightisme. A. Vigouroux and P. Juquelier. (Concluded.)
31 (October.) Soin donné aux épileptiques et leur traitement en Angleterre. Fletcher Beach (London).
32 Detailed Report of French Congress of Neurologists and Alienists. Brussels, Aug. 1 to 8, 1903. (Concluded.)
33 (November.) Cas de guérison complète de cécité (hémianopsie). S. Tchirief (Kiew).
34 Installation d'un pavillon d'isolement des aliénés tuberculeux à l'asile d'Armentières. E. Chardon and G. Raviart.
35 *Etude de la catatonie (Catatonie et démence précoce?). A. Paris (Nancy).
36 *Frequence et évolution des lesions du fond de l'œil dans la paralysie générale. G. Raviart and P. Caudron.
37 (December.) Hemisection traumatique de la moelle (syndrome de Brown-Sequard). Peugniez and C. Philippe.
38 Etude clinique des monologues chez les aliénés. Darcanne (Paris).
39 *Maladies unilatérales de l'oreille avec des hallucinations de l'ouie (cas de guérison simultanée d'otite externe unilatérale et d'hallucinations auditives homolatérales). J. Capgras.

**35. Catatonia.**—Several cases of this condition are described by Paris, who prefers for it the denomination "degenerative catatonic psychosis." He suggests that it should be considered as a syndrome of dementia precox, or as qualifying as "precocious" the dementia which follows the syndrome.

**36. Eye Lesions in Paresis.**—Raviart and Caudron publish the results of examination of some 44 paretics. They find numerous fundal lesions ranging from papillary atrophy through all the stages to the normal. It is most frequently unilateral. Only 6 patients had a normal fundus. The visual acuity, which was difficult to estimate, appeared very little diminished in most of the cases. About 90 per cent. of the cases had a history of alcoholism and 20 per cent. of syphilis.

**39. Unilateral Hallucinations in Ear Disease.**—Capgras reports a case and discusses it. He recognizes five different types of the relations of hallucinations of hearing with unilateral ear disease. The predisposition of the subject has much to do with the development. One type is that of a delusive but not hallucinative tendency, which puts on a delusive interpretation of the functional symptoms of the lesion which we should avoid mistaking for hallucination. The second type occurs where the unilateral lesion simply coexists with the hallucination; they are independent and have no characteristics indicating any relationship. In the third type the unilateral lesion may affect the sensorial element only, without any intellectual element. In this case, notwithstanding the unilateral lesion, the hallucination is bilateral, but it disappears with the cause which produces it. In the fourth class the unilateral lesion has no sensorial factor. It is not the provocative agent of the hallucination, but through the intellectual element, the unilateral type is produced. This character disappears only with the cure of the lesion and the hallucination becomes bilateral. Lastly, we have a type where the unilateral lesion plays a double part, uniting, so to speak, the two categories. It acts on the sensorial element and on the intellectual element. The first action causes the appearance of hallucinations and the second explains their unilaterality. The evolution of the lesion and that of the hallucination are parallel and their cure is simultaneous.

### Bulletin de l'Académie de Médecine, Paris.

40 (LXVIII. No. 8.) L'indoxyle urinaire et les couleurs qui en dérivent. L. C. Maillard.
41 Benchardat's Reagent in Urology. Chibret and others.—Urologie.
42 (No. 9.) *Therapeutic Applications of Sea Climate. A. Robin.—Des effets du climat marin et des bains de mer sur les phénomènes intimes de la nutrition.
43 *De la ponction lombaire dans les complications endo-craniennes des otites. Chavasse and Mahu.
44 Maladies épidémiques et contagieuses qui ont régné dans les colonies françaises en 1902. Kermorgant. Discussion in following number by Laveran and others.
45 *Note clinique sur un syndrome pelvi-abdominale chez la femme. F. de Ranse.
46 (No. 10.) *The Thenelles "Sleeper." Lancereaux.—La dormeuse de Thenelles. Un sommeil pathologique de 20 années consécutives.

**42. Therapeutic Application of Sea Climate.**—Robin formulates his views in regard to prescribing the sea climate in the statement that it is indicated when the vital processes are sluggish, but is distinctly contraindicated when there is excessively active metabolism. This excludes subjects with pulmonary tuberculosis as they are usually in the latter category. The stimulation of the sea air is particularly beneficial for anemic subjects with sluggish vital processes, for lymphatic, scrofulous and certain neurasthenic subjects with enfeebled nutrition. A small proportion of the tuberculous, about 8 per cent., exhibit normal or torpid organic interchanges, and this small class may find the sea climate beneficial. It may also aid consumptives who eat, digest and assimilate poorly notwithstanding excessive assimilation and disassimilation. Brief sojourn at the seashore may benefit such cases as also those in which the general health is still good and the lung lesions are healing. Such patients should be sent to a mild, equable climate and instructed to avoid winds and the cool of evening as also too brilliant sunlight, and to keep back from the immediate coast. The general and respiratory interchanges should be carefully examined from time to time and the patients sent away from the seashore if the findings become unfavorable. Tuberculosis of the bones and glands derives remarkable benefit from the sea air. Robin's work establishes the action of sea air and bathing on the organic interchanges, and thus confirms what has been learned by clinical experience.

**43. Lumbar Puncture in Otitis.**—Chavasse emphasizes the importance of the information to be learned by lumbar puncture in regard to endocranial complications of an otitis. When the cerebrospinal fluid is turbid or contains bacteria or polynuclear leucocytes or both, a bacterial meningitis is probable. An abundance of mononuclear lymphocytes in a clear or slightly turbid fluid speaks for tubercular meningitis. Lymphocytosis is also observed in other chronic meningeal processes and during retrogression of acute meningitis. In case of extradural and subdural suppurations the fluid retains its normal composition as long as the arachnoid sac is exempt. In case of a brain abscess, in thrombophlebitis of the lateral sinus and in non-bacterial meningitis the fluid is limpid and normal, but frequently under high pressure and more abundant than normal. Red corpuscles are liable to be found in the fluid after trauma of the basis or labyrinth, accompanied by symptoms on the part of the ear. Lumbar puncture should be combined with surgical intervention in otitic meningitis.

**45. Pelvi-Abdominal Syndrome in the Female.**—De Ranse describes a syndrome which includes pains, neuralgias, hyperesthesia, spasms, vasomotor disturbances, congestions, ptoses, functional troubles, etc. The syndrome involves the three systems, the genital, digestive and urinary, and treatment directed against any one of the triad is necessarily ineffectual as all three apparatus are involved owing to the direct nerve communication between them. The syndrome includes the "uterine syndrome" of the gynecologists, as well as dyspepsia, gastro-enteroptosis, hemorrhoids and symptoms in the urinary system. The system of plexuses in the abdomen controls the actions and reactions in the pelvi-abdominal organs and explains the pathologic connection between them. Hysteria and neurasthenia are frequently the primal cause of the syndrome which might aptly be called the pelvi-abdominal neuropathy. Treatment should aim to palliate the disturbances in the innervation and circulation of the parts and cure the general condition or diathesis in which they originate and which serves to maintain them. This double aim is realized by physical measures, fresh air, cold water, mineral waters,

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heat, electricity, gymnastics and massage. By its general and local action kinesitherapy responds to the numerous indications in these cases and merits greater attention on the part of practitioners. Associated with balneotherapy it affords the most rational and effectual mode of treatment for this pelvi-abdominal neuropathy, which persists unmodified after treatment of one of its factors if the others are neglected.

46. **The Thenelles "Sleeper."**—THE JOURNAL mentioned last June the death of Marguerite B. of Thenelles, France, who had passed twenty years in a pathologic sleep. In May, 1883, after a severe fright, she fell asleep and did not rouse until in May, 1903, when symptoms of progressing tuberculosis seem to have recalled her to life for a few days, after which she succumbed to her tuberculosis. Her father was alcoholic, her mother and sisters neurotic. The various features of her long sleep confirm Charcot's dictum that the sleep of lethargy is only a modified hystero-epileptic attack. When she roused she spoke the dialect of her childhood, but there were no signs of impairment of the nerve centers nor of the peripheral nerves and she took nourishment normally. During her trance she had been fed by the rectum. Her lethargic sleep had been accompanied every four or six weeks by sudden convulsions, each terminating by copious salivation or by a profound sweat. Her unconsciousness was never relieved and no signs of intelligence were apparent during the twenty years of her sleep. A small hysterogenic zone was found at the upper part of the sternum; the slightest touch to this region elicited convulsions. Otherwise there was general anesthesia. The case is reported by Dr. F. Charlier of Origny Sainte Benoite (Aisne), and Lancereaux reviews a number of other cases resembling it to a certain extent, although in none on record did the trance last so long. There is no danger of any one's being buried alive in a trance as the temperature alone is sufficient to show the difference between the condition and death, even without the absence of signs of putrefaction. The hysteric trance has never proved fatal in itself, but the lethargic sleep connected with melancholia entails a much graver prognosis as, for instance, in Semelaigne's case, in which after fifteen months of the trance the subject's face suddenly became congested, the respiration and pulse more and more hurried, and death replaced the pathologic sleep without the intervention of a gleam of consciousness. Hypnotism, electricity and other agents have proved powerless against these trances, but if, as has been suggested, they are due to ischemia of the brain, remedies against this should certainly be tried. As a rule, however, hysterics are best treated by being left alone. Instead of making a great ado over their seizures he advises the family to leave them entirely alone and quit the room, and has never had a second attack occur among patients thus treated. Raymond remarked in the discussion that he frequently had occasion to see subjects in such trances. Every month on an average one is picked up in the streets and brought into his service. He rouses them by moving the limbs, with other mechanical measures to arouse the benumbed psychic centers.

### Beiträge zur klin. Chirurgie, Tübingen.

*Last indexed page 851.*

47 (XLI, Nos. 1-2.) *Thyroid Tumors Inside the Trachea and Larynx and Their Removal. von Bruns.—Ueber Kropfgeschwülste im Innern des Kehlkopfs und der Luftröhre und ihre Entfernung.

48 Beitrag zur traumatischen Gangrän durch Ruptur der inneren Arterien-Häute. M. v. Brunn.

49 *Fatal Hemorrhages After Tracheotomy. M. Taute.—Tödliche Blutungen im Gefolge der Tracheotomie.

50 Resection of Deflected Nasal Septum. B. Honsell.—Zur Resektion der verbogenen Nasenscheidewand.

51 *Cyst-like Dilatation of the Ureter in Bladder. T. Cohn.—Ueber cystenartige Erweiterung des Harnleiters innerhalb der Harnblase.

52 Experimental Ligation of Intestines. A. v. Genersich.—Ueber Unterbindung des Darms.

53 *Beitrag zur operativen Behandlung des Mastdarm-Prolapses (of rectum). Becker.

54 Remote Clinical Results. Krönlein.—Klinische Nachträge.

55 Zur Kasuistik der Milz-Cysten (of spleen). E. Mosmler.

56 Grenz-Divertikel des Oesophagus. H. Brun.

57 Exstirpation eines Dermoids des Mediastinum anticum. O. W. Madelung.

47. **Intratracheal Thyroid Tumors.**—The diagnosis of a tumor of this nature is probable when an otherwise healthy person between 15 and 40 years old exhibits symptoms of dyspnea and a flat, subglottic, smooth tumor of the rear or side wall of the trachea is discovered. In very young subjects thyroid treatment might induce the retrogression of the tumor, but in older persons laryngotracheotomy is necessary in case the symptoms compel intervention. This was done in the 5 cases reported by von Bruns, 4 of which he has previously published. With the 6 he has been able to find in the literature there is now a total of 11 cases on record, with an additional case of malignant intratracheal struma on which he had occasion to operate. All who have had anything to do with these tumors emphasize the importance of refraining from attacking them by the endolaryngeal or endotracheal route on account of the inflammatory swelling and suppuration liable to follow.

49. **Fatal Hemorrhages After Tracheotomy.**—Taute adds 3 to the 82 cases of fatal hemorrhage after tracheotomy on record. Arrosion of the anonyma is the most frequent cause, occurring in 65 per cent., while arrosion of the common carotid occurred in merely 4.7 per cent. The veins are involved much less frequently than an artery. On the whole, about 2.5 per cent. of all cases of tracheotomy succumb in time to arrosion of some vessel. Treatment is mainly prophylactic, watching against decubitus from the canula, noting blood in the sputa and localised pain. In one of the cases described a threatening hemorrhage from the thyroid vein was effectually controlled, but usually such an occurrence is rapidly fatal. Children were the subjects in all but 10.6 per cent. of the total cases of fatal hemorrhage.

51. **Cystic Dilatation of Ureter Within Bladder.**—A young man had suffered for years from symptoms of chronic cystitis with retention of urine at times. The trouble was discovered to be a cyst-like enlargement of the ureter, projecting into the bladder. All disturbances ceased permanently after extirpation of the tumor.

53. **Operative Treatment of Prolapse of Rectum.**—Becker has treated 7 children and 4 adults by the technic which he describes and recommends as eminently fitted for the desired purpose. After several days of purging, followed by rinsing out the rectum with hydrogen dioxid, he draws out the prolapsed portion and detaches the mucosa as a separate cylinder, which is removed, while the rest of the prolapsing wall is drawn up into folds by a number of stitches woven in and out, and it is pushed back inside the tissues. He works through a circular incision around the anus, leaving the latter intact, as shown in the illustrations.

### Deutsche medicinische Wochenschrift, Berlin and Leipsic.

58 (XXX, No. 11.) *Unsere Erfahrungen mit "Dyspeptine" Hepp. F. Loeb.

59 *Ueber spastische Pylorus-Stenose und intermittierende Ektasie. G. Korn. (Concluded from No. 10.)

60 Ear Affection Due to Therapeutic Use of Arsenic; in Another Case to Salipyrin. Schasbach.—Nebenwirkungen einiger Arzneimittel auf das Ohr.

61 Importance of Fat in Pathology of Knee. A. Hoffa.—Zur Bedeutung des Fettgewebes für die Pathologie des Kniegelenks. (Commenced in No. 10.)

62 Treatment of Fracture of Lower Jaw. Kersting (Aix la Chapelle).—Behandlung von Unterkieferbrüchen.

63 Die Akademien für praktische Medizin. O. Witzel (Bonn).

64 Das Spezialistentum in der ärztlichen Praxis. W. Ebstein (Göttingen).

65 Zur Thiocinamin-Behandlung narbiger Pylorus-Stenosen. H. Strauss (Berlin).

66 The Schmidt Treatment of Cancer. Walser (Cologne).—Spezifische Behandlung des Krebses nach Otto Schmidt (Cöln). Reply by F. zum Busch (London).

67 (No. 12.) Gibt es ein biologisches Differenzierungs-Verfahren für Menschen- und Tierblut mittels der Präzipitine? A. Wassermann (Berlin).

68 *Zur Diagnose der hochsitzenden Mastdarm- und Flexur-Karzinome mittelst Palpation und Endoskopie. T. Rosenheim. (Commenced in No. 11.)

69 Blood Measurements in Arteriosclerosis. K. Sawada.—Blutdruckmessungen bei A.

70 *Nervöse und kardiale Arrhythmie. E. Rehfisch. (Commenced in No. 11.)

71 Treatment of Bone and Joint Tuberculosis. Review of late literature. F. Pels-Leusden. (Concluded.)

72 *Active Immunisation Against Tuberculosis. A. Moeller.—Zur Frage der aktiven Immunisierung gegen Tuberkulose. Reply by F. F. Friedmann.

58. **Experiences with Natural Gastric Juice from the Pig.**—Loeb reports from Ewald's clinic that the hopes cher-

ished in regard to this new stomachicum were only imperfectly realized.

59. **Spastic Stenosis of Pylorus and Intermittent Ectasia.**—This communication issues from Boas' clinic, and is an exhaustive monograph on the subject and its literature. The diagnosis of spastic stenosis is of course by exclusion, and time will usually aid in establishing it. The prognosis of single attacks is good, although they leave a predisposition to repetitions, and when they occur often the pylorus is liable to become hypertrophied and the accumulation of connective tissue to entail secondary organic stenosis. The attacks generally respond readily to treatment. Korn has never observed but a single case which proved refractory and led to loss of weight, etc. He ascribes the spastic contraction to some underlying ulcerative or inflammatory process, and hence treats it as if it were an actual ulcer, guarding against recurrences with the same care as for the latter. Boas and others do not counsel surgical intervention for spastic stenosis alone unless it recurs so frequently as to cause much disturbance. Gastroenterostomy is the usual choice, but Neumann has recently warned that on account of the hyperacidity which is seldom lacking in these cases, jejunostomy may be preferable.

68. **Early Diagnosis of High Cancer in Rectum.**—Rosenheim insists that it is sometimes possible to diagnose malignant disease high in the rectum or flexure by palpation and endoscopy even in the earliest stages. In a case personally observed a rather nervous man, 42 years of age, noticed that defecation required more effort than formerly and that the feces occasionally showed traces of blood. Otherwise no symptoms could be discovered, spontaneous or elicited. Rosenheim examined him early one morning after the intestines had been thoroughly evacuated. He was able to introduce without difficulty a tube rectoscope 25 cm. long by 2 cm. in diameter—the subject in the knee-chest position. At the entrance of the sigmoid flexure the passage of the tube was obstructed by a fold of mucosa which was easily pushed aside, but behind it was a sausage-like roll projecting into the lumen from the lower left corner. This roll looked very red and the surface was drawn taut and was not modified by contact with the tube. As he was inspecting it flatus passed and a few drops of blood trickled from above the roll. He at once advised removal of the growth, which he assumed to be a carcinoma at the entrance. The surgeon to whom he sent the patient attributed the troubles to nervousness, as palpation under chloroform failed to confirm the presence of a tumor. Two other physicians consulted took the same view, although the patient's general health showed impairment during the following months. He finally drifted into the hands of a nature doctor for a month, but finally, one year after Rosenheim's first diagnosis, Israel was able to palpate a tumor and removed it with 15 c. of the intestine. The cancer by this time was the size of a small apple and was surrounded by smaller nodules. Rosenheim ascribes great diagnostic importance to the trickling of blood from above the tumor, which he has found is almost pathognomonic for cancer in the esophagus. Obstruction to the passage of the tube is also a grave sign, as ordinary infiltration yields to pressure and allows the tube to pass. In case of spastic contraction quiet waiting for a time will usually witness its subsidence and allow the passage of the tube. A permanent obstacle speaks for malignancy as also the circumscribed lesion. Visual inspection of the rectum and flexure is the only reliable means of discovering these growths in their incipiency as they then escape palpation, even when the examiner is gifted with unusually long fingers. He mentions the scant attention paid to the technic of bimanual palpation in the latest text-books, "not excepting Tuttle's great special treatise," and warns against trusting too implicitly to the findings of palpation, citing several instructive cases. He describes his own technic in detail and commends it as the most comprehensive of which he knows. The subject lies on a flat table, first in the Sims position, then on his back, and then in the high stone position, and the examiner explores the rectum with his forefinger, while with the other hand he presses the parts against the finger. It requires great skill to palpate a tumor above the third sacral vertebra. In the earliest stages the cancer may be too soft to give definite findings on palpation. In conclusion Rosenheim cites another case to illustrate the great advantages of endoscopy. He noted in this case papillary excrescences near the flexure. They were not much larger than hemp seeds, but bled at the slightest touch and the mucus taken from between them gave the reaction for blood pigment. The poor general condition suggested malignancy and a few weeks later numerous metastases were discovered. None of the symptoms in this case suggested the sigmoid flexure as the seat of the trouble except the direct visual inspection. He regrets that Tuttle did not give the particulars of the visual findings in the 5 cases he reports in which the diagnosis was based on endoscopy after failure of palpation. He urges the importance of publishing the exact findings in these cases to establish a composite picture of high cancer in the rectum. Sometimes the aspect is unmistakable, as in Ewald's 2 cases, in which the red, knobby, easily bleeding tumor masses forbade all doubt. Exploratory excision is not of much value in case of growths in the rectum as benign tumors so readily become malignant in this locality. One great value of endoscopy is in the relief afforded by negative findings. If the tube can be introduced for 35 cm. without hindrance and the mucosa appears sound throughout, then cancer in this part of the intestine may be safely excluded and attention directed to the parts which are more readily accessible to palpation, especially with the pelvis elevated.

70. **Nervous and Cardial Arrhythmia.**—Rehfisch presents a number of curves and arguments to illustrate his contention that arrhythmia of nervous origin may be differentiated from cardial arrhythmia by the lack of great differences between two neighboring pulses. He uses the word "differenz" to express the length of time required for the single phases of the pulse wave, in comparison with its sister waves. In 100 healthy working people examined at rest only 4 presented an absolutely regular pulse in this respect. The difference in 97 per cent. did not amount to more than 20 per cent. He calculates the percentage as, for instance, with 75 beats to the minute, each pulse lasts 16/20 of a second, but if two pulse waves require 19/20 of a second, this brings the difference to 18.75 per cent. In health he never found this difference to surpass 31 per cent., and in functional nervous disease it never surpassed 36 per cent. In cases of organic heart disease it reached 120 per cent. in some instances. He classifies a neurasthenic with a sound heart by having him step up on a chair several times in succession, noting the differences before and after. In merely nervous subjects the difference of two neighboring pulse waves does not surpass 40 per cent. Direct irritation of the vagus, as in meningitis, or by reflex action, as in appendicitis, does not induce any higher values in this difference percentage. Experimental research and clinical experience demonstrate that the extrasystole represents a relatively weak heart action while the decided arrhythmia in nervous subjects is generally, although not always, produced by extrasystoles. For all these reasons we can assume that cardial arrhythmia is distinguished from the nervous variety by its high difference values. We can further accept that when high difference values are accompanied by marked irregularities in the pulse there is usually some organic basis to be found for them in the heart.

72. **Successful Active Immunization Against Tuberculosis.**—Moeller is director of the great Belzig sanatorium, and his work on the relation of the acid-fast bacilli to true tubercle bacilli received editorial comment in THE JOURNAL of March 5, 1904. He thinks the relation is similar to that between cowpox and smallpox. He found that by inoculating animals with some members of the group of acid-fast bacilli, in a certain sequence, it was possible to confer immunity against the later members of the series, and against true tubercle bacilli. The question was then to select one member of the group to use on man to render him similarly immune. He selected for this purpose the bacillus of blindworm tuberculosis as it is effective while it does not cause progressive lesions. The blindworm bacillus dies at a temperature of 25 C. He pro-

ceeded to inoculate himself and another subject with blindworm tuberculosis, commencing in March, 1902, and after repeating the inoculation once subcutaneously and three times into a vein, in December he made an intravenous injection of 1/50 of a loop of human tubercle bacilli. His general health and temperature were unaffected, but he lost about 15 pounds in weight during the following three months, but regained his normal weight in April. Two guinea-pigs were injected on the same date with the same amount of the same human stem culture. One died in thirteen days with symptoms of pneumonia; the other was killed in eighteen days and a tuberculous infiltration was found at the point of injection and several nodules in the peritoneum. Moeller's general health has not suffered during the long interval since and he is still actively prosecuting this research, since publishing his report in the *Zeitschrift f. Tuberkulose*, v. 3, 1904. He is confident that in the blindworm cultures we have a means for successful vaccination against tuberculosis, on the same principle as cowpox vaccination against smallpox.—Ed.] In the present communication he replies to Friedmann's article, which was summarized in these columns on page 623.

### Deutsche Zeitschrift f. Chirurgie, Leipsic.

*Last indexed page 744.*

73 (LXXI, 3-4.) *Zur Kenntnis der Wirkung der Nebennierenpräparate (suprarenal extract). R. Klapp.
74 Ueber Spiral-Brüche an der oberen Extremität (fractures of arm). J. Bayer.
75 Zur Pathologie und Therapie der Luxatio coxæ congenita. K. Vogel.
76 *Beiträge zur operativen Behandlung der Tuberkulose des Ellenbogengelenks (of elbow). N. Damianos.
77 Eine eigenartige bindegewebige Neubildung der Hohlhand (connective tissue, new growth in palm). H. Kästor.
78 Ueber operativ behandelte Fälle von Perforation der steinhaltigen Gallenblase in die freie Bauchhöhle (perforation of gall bladder). Neck (Reichel's service, Chemnitz).
79 *Kasuistische Beiträge zur Pathologie und Therapie des Volvulus des Coecum. R. Faltin (Helsingfors).
80 *Ueber die Bedeutung des Etappenverbandes in der Behandlung der seitlichen Rückgratsverkrümmungen besonders der habituellen Skoliose. J. Marcuse (Tilsit).
81 *Ueber die Regeneration der unterbundenen Saphena. G. Ledderhose (Strasburg).

**73. Inhibition of Absorption by Adrenalin.**—Klapp injected dogs with milk sugar and then determined the proportion that had been absorbed, comparing them with dogs injected at the same time with the same amount of milk sugar plus adrenalin. He found that even a single drop of the 1-1,000 solution had a decided effect in preventing absorption. He thinks that all measures which induce anemia have an inhibiting effect on absorption. He gives the particulars of 21 tests, with a number of curves showing the quantitative absorption.

**76. Operative Treatment of Tuberculosis of the Elbow.**—Damianos publishes the results obtained at Mosetig's clinic in operations on the elbow on account of tuberculosis. Between 1892 and 1895 resection was done in 28 cases, with one death from pyæmia. Eighteen had been completely cured out of 19 examined in 1895. From 1896 to 1901, 32 cases have been operated on, with no mortality. Out of 20 patients since examined 10 are completely cured with good function. Six have died and 4 required an insignificant after-operation. The technic includes a Bruns incision, sawing open of the olecranon, suturing it together again afterward. He appends comparative tables of similar operations in various German clinics.

**79. Volvulus of the Cecum.**—Faltin reports 2 new cases of volvulus of the cecum and 3 operated on by other Finnish physicians. This makes a total of 35 cases of volvulus of the cecum published in Finland. Most of the patients were less than 40 years old. The clinical picture includes the sudden onset, the vomiting, colic, obstipation, oblique or horizontal local meteorism, absence of peristalsis, moderate tenderness, comparatively chronic course, and late fecal vomiting. The patients usually assume a characteristic attitude. Out of 59 cases treated by reduction of the volvulus 28 have been cured, while only 3 recovered out of 9 in which resection of the gangrenous cecum was necessary. He remarks that on the whole we may ascribe a favorable prognosis to volvulus of the cecum.

**80. The Etappen Cast for Scoliosis.**—Marcuse has been much pleased with the plaster casts applied "by stages" to cure lateral curvature of the spine, especially habitual scoliosis. The results are most excellent if the patients are willing to persevere in the necessary after-treatment.

**81. Regeneration of Ligated Saphena.**—Ledderhose found in 2 specimens obtained at a secondary operation that the ligated and severed saphena in the thigh had become permeable again for the blood stream in time.

### Münchener medicinische Wochenschrift, Munich.

82 (LI, No. 10.) *Paralyses of Pregnancy. R. von Hösslin.—Ueber centrale Schwangerschaftslähmungen der Mütter.
83 *Early Narcosis. C. Homann.—Frühnarkose.
84 *Zur Aether-Tropf-Narkose. E. Barten.
85 *Ueber Bier'sche Stauung (passive congestion). Luxembourg.
86 Das Mucin der Milzbrand-Bazillen (of anthrax bacilli). L. Heim.
87 *Zur Diagnostik der Pulmonal-Insuffizienz. E. Fromherz.
88 *Fall von totaler Rhinoplastik aus dem Arm. Hahn.
89 Fall von Leber-Abscess und diffuser Cholangitis mit zahlreichen Komplikationen durch mehrfache chirurgische Eingriffe geheilt. H. Schelble.
90 Restoration of Patella by Periosteum and Tendon Flap from the Tibia. Dumstrey.—Neubildung der Patella, etc.
91 *Anwendung der Lumbal-Punktion bei Urämie. Seifert.
92 Behandlung des Morbus Basedowii mit Rodagen. W. Kühnemann.
93 *Verrichtung zum Wochen des Pflege-Personals. T. Dölfingen (Constance).
94 *Treatment of Hydrophobia. S. I. Georgescu (Bucharest). From society report.
95 *Preservation of Raw Meat. A. Babes. Ibid.

**82. Central Paralyses After Pregnancy.**—Hösslin reviews the symptomatology, prognosis and treatment of the various forms of central paralysis accompanying or following pregnancy and due to hysteria, myasthenia gravis, apoplexy, thrombosis, embolism or albuminuria, and he also reviews the relations of spinal affections to pregnancy. Delivery does not seem to be affected by spinal paralysis and conception and pregnancy proceed normally. In spinal affections delivery seems to be easier and quicker than in physiologic conditions. In conclusion he urges physicians to pay more attention to the coincidence of cerebral paralyses with pregnancy, as he believes that it is more frequent than generally supposed.

**83. Early Narcosis.**—Hofmann operates during the first whiffs of ether as his experience with hundreds of cases has shown that pain is almost if not entirely abolished and the muscles are completely relaxed. The depth and duration of the narcosis may be estimated from the condition of the muscles. The patient is placed in the required position with clothing loosened and told to count slowly backward. When he is doing this tranquilly the ether is dropped on the mask and narcosis is complete in one to three minutes. If not complete, chloroform is substituted. Everything has been prepared beforehand for the operation, which is commenced at once so soon as the muscles are relaxed. The few drops of chloroform used to supplement the ether are preferable to the exclusive use of ether. He regards this as the ideal narcosis.

**84. Ether Drop Narcosis.**—Barten proclaims from Berndt's surgical service at Stralsund that the ether drop narcosis is the least dangerous of all methods of narcosis known to date, while its technic is the simplest.

**85. Bier's Passive Hyperemia.**—Luxembourg has treated 50 patients with various joint affections by the application of Bier's technic of passive venous congestion. He uses a thin, transparent rubber band for the ligature, applying it for an hour morning and evening. Careful analysis of the material has shown that this simple, inexpensive and painless procedure is a most effectual mode of treating joint affections. The prompt relief of the pains is one of the best features of the treatment.

**87. Diagnosis of Pulmonic Incompetency.**—Fromherz reports 2 cases in detail, with the features in common of dyspnea and oppression in the chest, extreme hypertrophy of the right ventricle with relatively good heart action. There was also hypertrophy of the left ventricle, the apex beat in the mammary line. In both there was also a systolic murmur with the maximum in the second interspace to the left of the sternum, the second sound over the pulmonary well audible and also the diastolic murmur. A still more important symptom was the hyperglobulia, which is almost a constant accompaniment of long-standing vices of the right heart, that is

to say, conditions which induce disturbances in the domain of the pulmonary artery, especially those disturbances which diminish the total surface of the blood being oxidized. This hyperglobulia is not to be regarded as an evidence of disturbed compensation, but as an effort at compensation. The increase in the number of red corpuscles at high altitudes may be likewise viewed from this standpoint. The differentiating points between imperfect closure of the semilunar valves of the pulmonary artery and other pathologic conditions are enumerated, showing that the condition can be differentiated by exclusion if in no other way, and rational treatment depends on proper diagnosis.

88. **Nose Built Out of Arm.**—Habs' patient had entirely lost the nose and its bony support in consequence of lues. He made a new nose out of the arm by the technic shown in fifteen illustrations, with surprisingly fine cosmetic results. His technic differed from all others in that the strip of bone selected, covered with normal periosteum, was transplanted into the flap of skin that had been turned back above it. The raw surface of the split bone was turned toward the cutis, while a bridge of periosteum still connected it with the rest of the bone. The flap was then replaced and time left for adhesions to form between the bone and the under surface of the cutis. The bridge of periosteum was then severed and the free end of the flap turned down over the strip of bone. The bone was thus covered with good skin on both sides, and after three weeks' fixation of the arm to the face the flap was detached from its base and sutured in place. The lower quarter of the flap was then bent in at a right angle to give the nose the proper shape.

91. **Lumbar Puncture in Uremia.**—Seiffert has had extensive experience with lumbar puncture in uremia and has invariably found that the cases thus treated all recovered. In less than half an hour there is an amazing improvement in the condition. In his cases the uremia was due to scarlet fever. Lumbar puncture might prove equally effective in uremia from other causes, especially in eclampsia, but he has had no opportunity to give it a trial. He found the procedure a life-saving measure also in the initial convulsions of scarlet fever and of measles, although his experience with such cases has been limited. Even while the puncture was in progress consciousness returned and the convulsions ceased. It was impossible for him to test the cerebrospinal fluid obtained in these cases to learn whether it contained a specific toxin for animals.

93. **Electric Bell to Arouse Attendant.**—Büdingen gives an illustration of a simple contrivance to place under the rug by the bedside. As soon as any one steps on the rug an electric current is closed and a bell rings wherever desired. This bell is particularly useful in insane asylums, as it gives notice whenever a patient gets out of bed.

94. **Treatment of Hydrophobia.**—Georgescu describes the mode of treating rabies adopted by Babes. Besides the Pasteur treatment the principles of serum treatment are also applied, injecting the blood of immunized dogs, asses or horses. In addition Babes has discovered that the blood of persons who have undergone antirabies treatment acquires preventive value. The combination of all these measures has enabled cures to be realized, even when a much longer time has elapsed than hitherto supposed allowable. As it is difficult to obtain human blood for the purpose, he generally uses for injection the rabic toxins which he has isolated. This combined treatment has a much more powerful and more rapid action in the organism, the length of treatment is materially reduced and the mortality has been *nil*.

95. **Preservation of Raw Meat.**—A. Babes cuts the pieces of meat with as smooth a surface as possible, and then lifts them with an iron hook and dips them in a 2 per 1,000 solution of potassium permanganate. They are left in the fluid for twenty to thirty seconds, and then hung up in a ventilated room. By the third day the outside has dried into a protecting cover, which isolates the rest of the meat. In the course of a few weeks it becomes impossible to grow bacteria, even on slices cut from the meat.

## Wiener klinische Wochenschrift, Vienna.

*Last indexed page 735.*

96 (XVII, No. 4.) *Zur Pathologie des gastro-intestinalen adenoiden Gewebes (tissue). O. Stoerk.

97 *Behandlung von Oesophagus-Carcinomen mit Radium-Strahlen. A. Exner.

98 *Ueber Kryoskopie und reflektorische Polyurie. G. Kapeammer.

99 Einfluss gynäkologischer Operationen auf die Menstruation. J. Bondi.

100 Todesfall infolge von latentem Aneurysma arteriæ vertebralis. O. Groos.

101 (No. 5.) Klinische Erfahrungen über die Gruber-Widal'sche Reaktion. B. Kretzel.

102 *Zur Aetiologie der Cystitis im Kindesalter (in children). T. Zelenski (Cracow).

103 Amboseptor-Theorie und Kälte-Versuch. J. Morgenroth.

104 *Tuberkulose, Pocken, Traumatismus, Syphilis unter tropischen Indianern. O. Effertz (Mühnathan, Oajaca, Mexico).

105 (No. 6.) *Ueber Hautreflex (skin reflexes). K. Kreibich (Graz).

106 When Should an Injured Limb Be Amputated? F. Schopf.—Wann soll ein verletzten Glied amputiert werden?

107 (No. 7.) *Formation of Sugar in Liver Preserved in Alcohol. J. Seegen.—Die Zuckerbildung in der Leber unter Alkohol.

108 Ein neues, als selbständig erkanntes akutes Exanthem. D. Pospischill.

109 *Ueber die Art der Rückbildung von Karzinom-Metastasen unter der Einwirkung der Radium-Strahlen. A. Exner.

110 Melano-Sarkomatosis pia matris. O. Stoerk.

111 *Zur Kenntnis des Symptomenbildes: Polycythämie mit Milz-Tumor und "Epistaxis." W. Türk. (Commenced in No. 6.)

112 (No. 8.) Aceton-Gärung (fermentation). F. Schardinger.

113 Die Hernia intravesicalis. V. Blum.

114 Zur Kenntnis der traumatischen Luxation der Hand-Gelenke (of wrist). J. Berdach.

115 Three-branched Forceps for Gastroenterostomies. M. W. Herman (Rydygier's clinic, Lemberg).—Eine dreiblättrige Klemme zur G.

116 *Gastrointestinal Anastomosis Without Opening Lumina. Sato. From society report.

117 (No. 9.) *Mild Refrigeration to Hasten Healing of Granulating Wounds. S. Stiassny.—Ueber die Wirkung geringgradiger Kältetraumen auf granulierenden Wunden, zugleich ein therapeutischer Beitrag.

118 Albuminöse Glykosurie und Myxödem. W. Knöpfelmacher.

119 Zur Kenntnis der Chorea chronica progressiva. K. Frank.

120 Ueber die Rinden-Epilepsie (cortical). M. Mann (Budapest).

121 (No. 10.) *Der osmotische Druck und der Organismus. J. Kiss (Budapest).

122 Experimentelle Studie zur Frage der Ausscheidung von Bakterien aus dem Körper (elimination of bacteria). W. Noetzel (Königsberg).

96. **Proliferation Processes in Adenoid Tissue of Digestive Tract.**—Stoerk gives a number of illustrations of a peculiar proliferation. The surface of the stomach or intestines presents rolls or folds or disseminated bunches in the adenoid tissue suggesting lymphosarcomatosis, but there is no regional progression. The affection seems to occur universally from the start, or at least in more than one region at once. There is no metastasis nor involvement of adjacent organs, as in lymphosarcomatosis, and the microscopic findings speak against pseudoleukemia, although the affection has features suggesting both. The clinical picture comprised alternating diarrhea and constipation—the patient a working woman of 57—with edema, increasing weakness, "stabbing" pains in the abdomen, and small tumors could be palpated resembling parts of a fetus. Death in eight months. The necropsy showed the proliferation of adenoid tissue above described, extending through the stomach, but most pronounced in the large intestine, especially below the flexure. The second case was a woman of 26, and the lesions were restricted to the small intestine. Death occurred in consequence of perforation at two points in the lower ileum, through ulcerated nodules.

97. **Radium Treatment of Cancer of Esophagus.**—Exner's successful treatment of impermeable cancerous stricture of the esophagus was mentioned on page 929 of THE JOURNAL. He uses a No. 16 bougie, and screws on it a cylindrical hard rubber capsule, a rounded tip fitting into a hollow cylinder of the same. Between these two parts is inserted the scrap of radium —not more than 60 mg.—imbedded in dammar. The radium causes cavities in ulcerative carcinomata, due to necrotic breaking down of the tissue. This property of the radium renders permanent the enlargement of a cancerous stricture by this means, but it entails the possibility that perforation may be induced or hastened with too large dosage. He describes the details of 3 cases. All the patients had been treated by instrumental dilatation, with only transient benefit. The radium was applied seven times for twenty minutes during two weeks in the first case; in the second, four times for thirty minutes each in the course of eight days; in the third, six times for

thirty minutes each during a corresponding number of days, and twice more after suspension for nine days. Two other cases were treated with about the same technic, and the results have been apparently perfectly successful in each. Still an other patient was treated before the technic was perfected, but the progress of the cancer was such as to render palliative efforts useless, and he died in less than four months.

98. **Cryoscopy and Reflex Polyuria.**—Kapsammer writes from the Vienna Institute for Experimental Pathology that his and Paltauf's experience has demonstrated that catheterization of the ureters is liable to entail a reflex polyuria which may prove misleading in the functional tests. He emphasizes the necessity of catheterizing both kidneys, and of paying due heed to the amount of urine, comparing it with the normal average, which he believes is .5 c.c. to the minute for each kidney. Particular attention should also be paid to the escape of urine outside the catheter.

102. **Cystitis in Children.**—Girls are subject to cystitis more than boys, but Zolenski reports 4 cases observed in boys between 4 and 12. One was due to a coccus, the invasion favored by trauma, the others to tubercle bacilli, although the general health was good. In 2 cases the kidney had evidently been primarily affected and in another there had been a preceding tuberculous fistula in the epididymis. None of these cases was permanently cured.

104. **Pathology of Tropical Indiana.**—Efferts has resided for six years in southern Mexico, at one of the hottest points. He has noticed that tuberculosis always takes the galloping form among the natives, fatal in three months in apparently the most robust subjects. On the other hand, their resistance to traumatisms is amazing. He was superintendent of the hospital at Pochutla, which has only three wards, and the one that happens to be empty is used for the morgue. There is no flooring and no bed linen. The patients lie on duck cots and the duck, being nailed on, is never washed. The families of the patients are supposed to attend to the cleaning of the room. Two of the patients were brought in moribund. With these exceptions he never lost a patient during his régime and never had a case of "wound fever," although the wounds are always severe and usually multiple, generally the result of a drunken fray in which the huge knives, the "machetes," are freely wielded. They resemble an old Roman sword in shape and almost in size. The skull was opened in many instances and the dura visible. Other patients had the ribs broken in and breathed through this artificial opening. All recovered under kreolin dressings without surgical intervention and without fever. Smallpox has a mortality of 75 per cent. among these Indians. Malignant forms are the rule at the onset of an epidemic. He never had occasion to observe cases of recent syphilis, nor any of tabes or paralysis, nor tertiary lesions. Although extremely refractory to syphilitic infection, yet the disease exists among them. Testimony to this fact was afforded by the fulminating form of syphilis acquired by a European from intercourse with the Indian women. Efferts suggests as a possible explanation for these paradoxical facts that tuberculosis and smallpox are comparatively new diseases to these Indians, while syphilis has been with them for centuries and has thus conferred a kind of immunity on the race. The reverse is true of Europe, where tuberculosis and smallpox are the old diseases and syphilis the new one. He is convinced that all diseases have a tendency to die out in time and that the last phase they pass through before their final extinction is the venereal phase, that is, requiring more intimate contact for infection. The day is coming, he thinks, when syphilis will have entirely vanished and tuberculosis will have subsided into an exclusively venereal disease—the stage in which syphilis now is at present in man. In animals it has already passed beyond this stage and completely died out, leaving permanent immunity. This hereditary immunization against syphilis explains the fact that as immunization progresses the therapeutic effect of drugs increases in proportion, and consequently when a disease has arrived at the venereal stage there will always be a better chance for a successful specific.

105. **Reflex Pathology of the Skin.**—Kreibich had a patient, a hysteric young woman, who submitted to various tests which demonstrated the possibility of causing in fifteen minutes by reflex action various cutaneous affections. He attributes them to irritation of the walls of the vessels by nervous influences. The walls become permeable and allow the passage of fluids. Large effusions are thus forced out under high pressure into the fibers of the cutis and the epithelium, causing vesicular eczema, which is thus in certain cases due to a nervous influence by the reflex route on the vasomotors. His tests establish the possibility of a nervous origin by reflex action for many kinds of skin affections from mere hyperemia to gangrene, the primary irritation being central.

107. **Sugar Formation in Liver Tissue Preserved in Alcohol.**—During Seegen's last illness he urged the immediate publication of this, his last work, to call attention to the discovery mentioned in the title. It modifies our previous conceptions of the mechanism of sugar formation. Since his announcement that under certain circumstances no glycogen could be found in the liver immediately after death, he has been constantly studying the subject of glycogen formation. The chopped liver of dogs was examined for glycogen and sugar at once after death and again at intervals after the liver had been set aside in alcohol. In one experiment the liver contained .9 per cent. sugar at once after death and 7.9 per cent. after having been five days in alcohol. In another the percentage was at first 1.1 and after seven days in alcohol it amounted to 7.4. The total sugar increased in like proportion. The elaboration of sugar continued under the surface of the alcohol. The theory that the elaboration of sugar is a function of the living cell is disproved by these facts. Instead of the mysterious vital forces of the living cell we must admit chemical action as a factor in the production of sugar. The action of enzymes as an essential factor in the process of elaboration of sugar is likewise excluded by these new facts. Hence the assumption that the liver sugar is derived from the liver glycogen is refuted once for all.

109. **Mode of Retrogression of Cancer Metastases Under Radium Rays.**—Exner was able to trace histologically the retrogression of carcinomatous nodules in the mamma in one out of the 2 cases described. The findings were controlled by histologic examination of excised, non-exposed nodules. He found that exposure for a single half-hour was able to induce complete retrogression of a nodule in the cutis. The retrogression was complete in five weeks. The most remarkable feature of the phenomenon is that while the cancer cells retrogress none of the other elements of the cutis is destroyed. He gives 8 illustrations of the findings. They show that within a week of the exposure there is a new formation of connective tissue, while at this time the cancer cells show no change. There are numerous new formed capillaries in the new connective tissue. No change appears in the cancer cells (vacuolization) until two weeks have elapsed. The rapid proliferation of connective tissue seems to spread the cancer cells apart and overwhelm them by its growth, actually squeezing them to death. The exposed cancer tissue thus behaves like a transplanted fragment of an organ. It does not succumb to rapid necrosis, but is grown through by the surrounding tissues and slowly absorbed. However this may be, one thing is certain, namely, that the physiologic relations of growth between the cancer cells on the one hand and the connective tissue on the other are disturbed. The latter is stimulated to a proliferation which chokes out the former. Whether the exposed cancer cells suffer in their vitality from the effects of the exposure and thus become less resistant, is still a matter for conjecture.

111. **Polycythemia with Enlarged Spleen and Pigmentation.**—Türk has encountered 7 cases of this symptom-complex since 1900. He analyzes them in detail and mentions that he had very promising results from administration of large doses of arsenic in one case. He proposes to use it further if he happens to meet any more patients with this affection. He administered it on the grounds that arsenic checks the pro-

liferation of the blood-forming tissues. He has had occasion to note this fact repeatedly in myeloid leukemia. He administered progressive doses up to 30 drops of Fowler's solution daily, keeping it up for months. The number of erythrocytes diminished under this medication by one and one-half millions, the hemoglobin by 4 gm. to the 100 c.c. of blood. The intense purpura pigmentation vanished almost completely, and the spleen became very much reduced in size. Of course the toxic effects of arsenic must be considered, so that the drug can not be kept up indefinitely, but the results encourage further attempts in this line.

116. **Gastrointestinal Anastomosis Without Opening the Lumina.**—Sato studied on dogs and monkeys the behavior of two submucous surfaces in contact in the intestinal tract. He found that simple contact, even when the serous and muscular coats had been removed, did not lead to a communication between the parts, but that when the parts in apposition were treated with a caustic an opening was soon established. In monkeys this occurred in less than twenty-four hours. The silver nitrate pencil is more convenient for the purpose than the thermocautery, and the moist caustic causes less damage than heat. He incises and detaches the serous and muscular coats at the spot and applies the silver pencil about 1 or 2 mm. from the edge of the wound, carefully sponging away any excess of the nitrate that may be dissolved. The surfaces are then sutured together according to Czerny's technic. The lumina are not opened until nearly twenty-four hours after the surgical intervention, thus affording better conditions for repair. The operation is extremely simple and rapid.

117. **Refrigeration Treatment of Granulating Wounds.**—Stiassny sprays the wound with ethyl chlorid after protecting the ulcerating portion with an insoluble salve. He tabulates the details of 48 cases thus treated. His conclusions are that this treatment is liable to prove a valuable adjuvant to other measures in case of leg ulcers, although it is not always successful. It is particularly beneficial in granulating effects on a traumatic basis. The surrounding tissues are sound in these cases and respond to the stimulation of the cold application. He uses for the protecting salve a mixture of equal parts of lanolin and vasogen and one-tenth Peruvian balsam. The best results were obtained with hospital patients, as they could be sprayed two or three times a day, while the outpatients were seen only two or three times a week.

121. **Osmotic Pressure and the Organism.**—Kiss reviews what is known on this subject and points out that the theory of osmosis is far from explaining the processes observed in the living organism. These processes resemble physical processes under certain aspects, but they differ from them in many points, such as, for instance, the fact that they generally occur much more rapidly. The reaction of the cells is always physiologic, not purely physical. The cell works with molecules and ions and probably utilizes also the forces of osmosis, guiding and transforming them to suit its purpose, but the *modus operandi* is to date still a mystery.

### Zeitschrift f. Krebsforschung, Berlin.

*Last indexed page 885.*

123 (I, No. 2.) Importance of Plimmer's Bodies and Cancer Induced in Animals with Human Material. Gaylord (Buffalo).—Ueber die Bedeutung der Plimmerschen (bezw. Bjöbringschen) Körperchen und die durch menschliches Material erzeugte Krebswucherung bei Tieren.

124 Mikroskopische Untersuchungen über die Taubenpocke (pigeon disease). L. Michaelis (von Leyden's clinic, Berlin).

125 Cancer Research in London and Paris. L. Aschoff (Göttingen).—Notizen über den gegenwärtigen stand der Krebsforschung in London und Paris.

## Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE PERPETUAL VISITING AND POCKET REFERENCE BOOK. Including Information in Emergencies from Standard Authors, also the Following Comprehensive Contents: Table of Signs and How to Keep Visiting Accounts, Obstetrical Memoranda, Clinical Emergencies, Poisons and Antidotes, Dose Table, Blank Leaves for Weekly Visiting List, Memorandum, Nurses' Addresses, Clinical Record, Obstetrical Record, Birth Record, Death Record, Vaccination Record, Bills Rendered, Cash Received, Articles Loaned, Money Loaned, Miscellaneous, Calendars for 1904 and 1905. Bound in Morocco, Red Edges. Pp. 124. Price, Free (postage 10 cents). St. Louis, Mo.: The Dios Chemical Company. 1904.

LABORATORY MANUAL OF PHYSIOLOGICAL AND PATHOLOGICAL CHEMISTRY, for Students in Medicine. By Dr. E. Salkowski, Professor in the University and Director of the Chemical Laboratory of the Pathological Institute, Berlin. Authorized Translation from the Second Revised and Enlarged German Edition. By W. B. Orndorff, A.B., Ph.D., Professor of Organic and Physiological Chemistry in Cornell University. With 10 Figures and 1 Colored Plate of Absorption Spectra. First Edition. First Thousand. Cloth. Pp. 263. Price, $2.50. New York: John Wiley & Sons. 1904.

ABBOTT'S ALKALOIDAL DIGEST. A Brief Therapeutics of Some of the Principal Alkaloidal Medicaments, with Suggestions for Clinical Application Embodying Various Articles on Important Special Agents and Certain Great Phases of Alkaloidal Therapy That Have Been Developed in My Personal Practice. By W. C. Abbott, M.D., Editor of the Alkaloidal Clinic. Flexible Leather. Price, 50 cents. Pp. 54. Chicago: The Clinic Publishing Co. 1904.

ATLAS AND EPITOME OF OPERATIVE GYNECOLOGY. By Dr. O. Schäffer of Heidelberg. Edited, with Additions, by J. Clarence Webster, M.D. (Edin.), F.R.C.P.E., Professor of Obstetrics and Gynecology in Rush Medical College, in Affiliation with the University of Chicago. With 42 Litho-graphic Plates in Colors, and 197 Text Figs. Pp. 138. Price, $3.00 net. Philadelphia, New York, London: W. B. Saunders & Co. 1904.

A MANUAL OF CLINICAL DIAGNOSIS BY MICROSCOPIC AND CHEMICAL METHODS. For Students and Practitioners. By Charles E. Simon, M.D., Late Assistant Resident Physician at Johns Hopkins Hospital, Baltimore. Fifth Edition, Thoroughly Revised and Much Enlarged. Pp. 606, 150 Engravings, 23 Colored Plates. Cloth. Price, $4.00 net. Philadelphia and New York: Lea Brothers & Co. 1904.

A PRACTICAL TREATISE ON NERVOUS DISEASES. For the Medical Student and General Practitioner. By F. Savary Pearce, M.D., Professor in Nervous and Mental Diseases in the Medico-Chirurgical College, Philadelphia. Colored Frontispiece, 91 Illustrations in the Text, Many in Colors. Cloth. Pp. 401. Price, $4.00. New York and London: D. Appleton & Co. 1904.

AIR, FOOD AND EXERCISES. An Essay on the Predisposing Causes of Disease. By A. Rabagliati, M.A., M.D., F.R.C.S. Edin., Honorary Gynecologist, and Late Senior Honorary Surgeon, Bradford Royal Infirmary. Third Edition, Greatly Enlarged and Almost Entirely Rewritten. Cloth. Pp. 559. Price, $3.00 net. New York: Wm. Wood & Co. 1904.

DIRECTIONS FOR LABORATORY WORK IN PHYSIOLOGICAL CHEMISTRY. By Holmes C. Jackson, Ph.D., Assistant Professor of Physiologic Chemistry in the University and Bellevue Hospital Medical College. Second Edition, Rewritten and Enlarged. First Thousand. Cloth. Pp. 148. Price, $1.25. New York: John Wiley & Sons. 1903.

THE VALUE OF URETERIC MEATOSCOPY IN OBSCURE DISEASES OF THE KIDNEY. A Study in Clinical and Operative Surgery. By E. Harry Fenwick, F.R.C.S., Surgeon to and a Lecturer on Clinical Surgery at the London Hospital. Cloth. Pp. 219. Price, $2.00 net. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1903.

DISEASES OF THE INTESTINES. A Text-Book for Practitioners and Students of Medicine. By Max Einhorn, M.D., Professor of Medicine at the New York Post-Graduate Medical School and Hospital. Second Revised Edition. Cloth. Pp. 597. Price, $3.00 net. New York: Wm. Wood & Co. 1904.

INFORME MENSUAL SANITARIO Y DEMOGRAFICO de la Republica de Cuba. Presentado al Secretario de Gobernacion Sr. Eduardo Yero Buduen por el Dr. Carlos J. Finlay, Jefe de Sanidad de la Isla de Cuba. Diciembre, 1903. Paper. Pp. 61. Junta Superior de Sanidad de la Isla de Cuba.

IMMUNE SERA. Hemolysins, Cytotoxins and Precipitins. By Professor A. Wassermann, M.D. University of Berlin. Authorized Translation. By Charles Boldman, M.D. First Edition. First Thousand. Cloth. Pp. 77. Price, $1.00. New York: John Wiley & Sons. 1904.

LECTURES, CHIEFLY CLINICAL AND PRACTICAL, ON DISEASES OF THE LUNGS AND THE HEART. By James Alexander Lindsay, M.D., F.R.C.P. (Lond.), M.A., Professor of Medicine, Queen's College, Belfast. Cloth. Pp. 447. Price, $3.50 net. New York: Wm. Wood & Co. 1904.

CONTRIBUCION AL ESTUDIO DE LA ESCARLATINA EN LA HABANA por el Dr. Mario G. Lebredo, Vice-director del Hospital "Las Animas." Para Distribucion Gratis. Paper. Republica de Cuba. Secretaria de Gobernacion. Junta Superior de Sanidad. Habana. 1904.

OBSTETRICS FOR NURSES. By Joseph B. DeLee, M.D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. Fully Illustrated. Cloth. Pp. 400. Price, $2.00 net. Philadelphia, New York, London: W. B. Saunders & Co. 1904.

SONDER-ABDRUCK AUS ARBEITEN aus dem Gebiete der klinischen Chirurgie dem Andenken Hofrat Professor Dr. Carl Gussenbauer. Gewidmet von seinen dankbaren Schülern. Paper. Pp. 39. Wein und Leipzig: Wilhelm Braumüller. 1903.

THE INTERNATIONAL MEDICAL ANNUAL. A Year Book of Treatment and Practitioner's Index. 1904. Twenty-second Year. Cloth. Pp. 770. Price, $3.00 net. New York: E. B. Treat & Co.

THIRTIETH ANNUAL REPORT OF THE MEDICAL DIRECTOR OF THE CINCINNATI SANITARIUM. For the Year Ending Nov. 30, 1903. Paper. Pp. 17. Cincinnati: W. B. Carpenter Co.

TWELFTH ANNUAL REPORT OF THE BOARD OF HEALTH OF THE CITY OF SPOKANE, WASH. For the Fiscal Year Ending Dec. 31, 1903. Paper. Spokane: Union Printing Co. 1904.